



TOGETHER
for a sustainable future

OCCASION

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



TOGETHER
for a sustainable future

DISCLAIMER

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

FAIR USE POLICY

Any part of this publication may be quoted and referenced for educational and research purposes without additional permission from UNIDO. However, those who make use of quoting and referencing this publication are requested to follow the Fair Use Policy of giving due credit to UNIDO.

CONTACT

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

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

19203

24F

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

JUNE 1991
ORIGINAL : ENGLISH

PROMOTION OF INTERNATIONAL INDUSTRIAL CO-OPERATION AT ENTERPRISE
LEVEL THROUGH THE UNIDO CENTRE IN MOSCOW

TF/GLO/90/029

**EXPERT SYSTEM TO AUDIT
INDUSTRIAL FIRMS IN THE USSR**

Prepared by the United Nations Industrial Development Organization

Based on the work of

A.Garès, J.Gavazzi, A.Iszak, H.Gicquiau

Auditing consultants

This document has not been edited

Table of contents

1. Purpose of the Mission	1
2. Description of the Mission	1
2.1. Members of the Mission	1
2.2. Preparation and organization of the Mission	2
2.3. The visits and meetings.....	3
3. Practical results of the Mission	4
3.1. A cooperation agreement with Uralconversia	5
3.2. A group of experts	5
3.3. An informal structure for the follow-up of the project.....	6
4. Conclusion: feasibility of an Expert System	6
4.1. Feasibility.....	6
4.2. Methodology.....	9
4.3. Projected time and cost.....	10
4.3.1. Time	10
4.3.2. Cost	11
4.4. Commercial perspectives.....	12
4.5. Organization of the project.....	13
5. Annexes	14

1. Purpose of the Mission

The aim of this Mission was on-site investigation for a feasibility study to create an expert system for auditing industrial firms in the USSR. A preliminary assessment of the feasibility of the system is presented here.

Due to the inconsistency between market economy criteria and the Soviet economic system which exists today, foreign firms interested in cooperation with industrial firms in the USSR cannot rely on statistics or auditing methods to evaluate the real economic potential of their possible partners.

The UNIDO Center in Moscow identified this situation as one of the main concerns of Western firms in their search for possible cooperation with Soviet firms. It was thought that this problem could be solved through the creation of a dedicated software tool.

Therefore, one of the principal tasks of the Mission was to figure whether existing expertise can be used to evaluate industrial firms in the Soviet context, and to find out if any relevant qualitative and quantitative data are available. If both requirements are fulfilled, then artificial intelligence software techniques make it possible to develop an expert system which can assist foreign companies in evaluating firms in the USSR.

The cities of Sverdlovsk and Zarechny, in the Ural region, were chosen as test fields because the military industries, which are predominant in this formerly restricted area, are now in the process of converting into civil and export oriented production. They provide good examples of factories to be evaluated in a perspective of cooperation with foreign firms.

2. Description of the Mission

2.1. Members of the Mission

Four consultants, each with top-level competence in his specific field, were invited to perform this Mission. They were selected for their complementary viewpoints and experience on the different sides of the evaluations to be performed.

□ Alain Garès headed the Mission. He is CEO of Dialogics, Toulouse, (France), a software company which specializes in

advanced applications of artificial intelligence techniques. Dialogics is also working on expert systems based on non-conventional approaches to corporate audits and evaluations.

□ Arnold Izsak is a consultant in corporate strategy and audit and Vice-President of Mac Group, an international consulting firm in Paris (France), London (Great Britain) and Boston (USA). He has outstanding experience in corporate audit, strategic analysis and (all forms of cooperation); his clients include some of the largest companies in Europe.

□ Jean Gavazzi is CEO of Alcyon, an electronics company in Toulouse (France) which belongs to a group engaged in the automobile industries, mecatronics, and others fields. He has been in managerial positions in the industry for ten years, and has a wide technical background and extensive experience in industrial production.

□ Hervé Gicquiau works with CEDUCEE (Centre d'Etudes et de Documentation sur l'URSS, la Chine et l'Europe de l'Est), a research center for the French government. He is an expert on industry in the USSR. He is one of the foremost sources of available knowledge in the Western countries concerning Soviet industry and interpretation of its economic, political and jurisdictional context.

Thierry David, expert for the French government at the UNIDO Center in Moscow, provided outstanding technical support (contacts, information about the industry in the USSR and its context) to the Mission both in the preparation process and during the course of the Mission.

2.2. Preparation and organization of the Mission

Prior to deciding about the Mission, contacts were made to assess the relevance of the project with industrial firms, banks and organizations already engaged, or considering engagement with firms in the USSR. These contacts were made by Thierry David for UNIDO, and by Alain Garès for Dialogics.

The project was submitted to and approved by the French authorities, particularly the French Ministry of Industry, which should provide further support to the project.

The Mission was set up by the UNIDO Center in Moscow and Dialogics.

Uralconversia, a company created to promote the conversion process in the military industries of the Ural region (see presentation of Uralconversia in annex), was an essential partner in this project. It was agreed with Uralconversia that the firms to be visited would be in the area of Sverdlovsk. Evgeni Gulkin, the representative of Uralconversia in Moscow, was instrumental in the agreement with Uralconversia about the Mission and later on in the organization of the Mission itself.

The selection of experts was made by Dialogics in accordance with UNIDO.

All practical steps before the departure (visas, registration with UNIDO, etc) were arranged by UNIDO (Vienna and Moscow) and Dialogics (Toulouse).

Contacts and logistics in Moscow were arranged by the UNIDO Center in Moscow.

Uralconversia proposed and organized the program of visits in Sverdlovsk and Zarechny, and organized local transportation and accommodation.

2.3. The visits and meetings

Three full days were spent in Sverdlovsk and Zarechny. The program of the Mission was very dense (see schedule in annex). It consisted in visiting industrial plants and meeting with local organizations of interest to our project.

A visit to a firm took two to three hours, about half of it in meeting the management and the other half visiting the plant. The openness of these visits must be emphasized, since we had access to about all the information we wished to have.

The following firms were visited:

URALLEKTROTRANSMASH

Production: heavy electrical equipment (converters, generators, etc) and vacuum cleaners.

About 15 000 employees.

NOVOTRUBNY

Production: steel pipes and containers.

22 000 employees.

- START (former name: COMPRESSOR)**
Production: rocket and missile launchers.
900 employees.
- BELOJARSK SHOE FACTORY**
Production: shoe uppers, shoes, leather clothes.
350 employees.
Under private (cooperative) ownership since October 1990.
- URALTRANSMASH**
Production: armored vehicles.
Employees: figure not available. Very large (several thousands).

Contacts were made with several local economic organizations in Sverdlovsk and Zarechny, in addition to Uralconversia:

- Bolshoi Ural (Greater Ural) corporation, which is an official organization in charge of promoting local development
- Citron joint-stock company, acting as an intermediary for various business fields
- city of Zarechny, and Uralconversia Technopolis project in Zarechny
- Association of the Sverdlovsk Region Industrial Enterprises
- Regional Committee for Privatization

In Moscow, we made contacts with representatives of firms engaged in USSR, in order to check their reactions, as potential users, to the idea of the expert system. We had the opportunity to discuss this project with representatives of French industrial firms (L'Oreal, Elf-Aquitaine), banking institutions (Credit Lyonnais), and with a representative of a large Japanese company (Mitsubishi).

At the end of the Mission, a visit was paid to French diplomatic authorities in Moscow, since the French Ministry of Industry was informed of the project and was supporting it.

3. Practical results of the Mission

In terms of practical organization for further cooperation, this mission was very successful since strong links were made with

Uralconversia, and with a group of Soviet economic experts. A permanent secretariat was also set up informally in Moscow.

3.1. A cooperation agreement with Uralconversia

The Mission in Sverdlovsk was concluded by the signing of an agreement between Uralconversia and Dialogics (see text in annex).

This agreement is about cooperation in the preliminary phase of the project, which consists of working on the feasibility of the system and its specifications in broad terms, leaving aside the technical aspects. However, the terms of the agreement also make it possible to engage later on into a longer cooperation, if this project is to be continued.

The agreement between Uralconversia and Dialogics is a very important step to the completion of the project, since it is indispensable to rely on a stable partner of the Soviet side to be able to complete the analysis, then to realize the expert system.

Uralconversia is extremely motivated by the project, and seems to be ready to a full cooperation as it becomes necessary to have more information about industrial firms. From our point of view, it is a very good partner since it is able to provide access to the firms we will have to visit, contacts in different domains, and competence to contribute, if we need it, to the analyses of the firms and of their context.

3.2. A group of experts

As a part of this agreement, it is specified that a group of expert is set up to provide information and advice on the feasibility of the system.

This group is composed of four experts on each side. Soviet experts are designated by Uralconversia (see provisional names in the text of the agreement). The French experts are the four members of the Mission. Its composition is, of course, subject to change according to the evolution of the project.

The role of this group will be to examine all aspects of the feasibility of the system, and to give broad directives about its specifications. Later on, it might be asked to work on the contents, in terms of knowledge, of the expert system. In the actual

development phase, however, the part played by each expert will have to be specified precisely, mainly because of juridical reasons.

3.3. An informal structure for the follow-up of the project

It was also agreed that the project would be given full attention on a permanent basis by an informal structure in Moscow, which is necessary for a good coordination of all actions on its behalf. This "permanent secretariat" is composed of Thierry David, from UNIDO, and Evgeni Gulkin, from Uralconversia.

4. Conclusion: feasibility of an Expert System

The present conclusions are drawn from the information we gathered during the Mission, and from the work that was done since then. The Soviet group of experts was asked for a contribution, but it was not available as of July 30, 1991.

It must be recalled that the Mission was aimed at reaching a conclusion about the principle of the feasibility of the expert system, by getting a rapid view at some Soviet firms in the perspective of cooperation with Western firms. This short stay, however intense, answered only some basic questions on this topic, but raised many others — which was also, after all, one of its aims. Therefore, these conclusions do not constitute a full fledged feasibility study, which would require more information, more experience and more work to determine accurately, in particular, planning and cost evaluation of the project. We tried, however, to reach estimations on the main points which belong to a feasibility study, but it must be kept in mind that these estimations are subject to more precise evaluation.

4.1. Feasibility

The conclusion of the Mission, about the principle of feasibility, is positive: it seems to be possible to develop a knowledge-based software tool to assist foreign companies in evaluating firms, in a perspective of cooperation, in the USSR.

As it was figured out previously, the development of the system will be based on artificial intelligence software techniques, and it will be made available on regular personal computers (desktop and portable), possibly on both main operating systems (IBM-DOS and Apple Mac OS). It should not require more computing or

memory power than today's standards for high-end personal computers. It can be designed to be extremely easy to use, and yet powerful enough to enable its users to efficiently perform its task.

Obviously, the most difficult part of this project is in constructing a methodology of evaluation. As far as we know, expertise on this subject is hardly available today, and a significant effort of conceptualization will have to be made to come up with a model that can be used as a reasoning base for the system.

Therefore, it will take much time, and many visits of firms in the USSR, to eventually build up the knowledge that will be fed into the system. It will also take several experts with complementary fields of competence, because a relevant audit, even with a limited scope, has to be based on a "picture" of the firm as a whole, and therefore requires different kinds of expertise. For instance, it will be necessary to take into account even the juridic status of a firm, among other criteria, to evaluate its production and cooperation capabilities.

From the user's viewpoint, the system will consist of an "intelligent" (meaning adaptive, according to the topic and its context) list of items to check and questions to answer, covering all aspects of the firm's activity: products, machine equipment, manpower, current customers and suppliers, juridic and economic context, etc. These questions will often call for qualitative rather than quantitative answers. It is also probable that in many cases, the system will not merely ask a question, but will instead suggest a procedure to get the corresponding piece of information (for example: questions about the level of training and competence of the workers will be replaced by indications on how to have an idea of it).

It will probably be possible to use the system in an "open" mode (choosing the order of the questions, going back and forth among the topics to be considered) or in a "guided" mode (letting the system ask the questions).

The conclusions of the analysis performed by the system will be in terms of "weak points and strong points" rather than "yes or no", giving indications rather than making decisions. It will be intended to provide its user with elements of decision making, not to decide in his (her) place. Its aim will be to make sure that a decision is made on solid grounds, after all the relevant information has been gathered and treated as experts would have done it. It will also make sure that the reasoning is conducted

according to an homogeneous process, when several firms are audited.

These features, briefly summarized, result from 1) what we think to be possible and 2) what we think to be the need of a Western firm engaged into a process of looking for industrial cooperation in the USSR. Of course, the actual demand when developing the system will give better information on the latter. As of now, it seems to be possible to develop a system along these lines.

Using the system would then bring several important advantages to its users:

- **exhaustiveness:** all the questions which are relevant to this specific kind of firm are taken into account.
- **expert gathering of information:** the answers to these questions, if they are difficult to get, are looked for by the same methods that an expert would use in each specific case.
- **multiple expertise:** considering that several fields of expertise are solicited in the audit of one firm, they all are available and called upon as necessary.
- **expert reasoning:** the conclusions that can be drawn from all these informations are reached by the same proceeding and reasoning as an expert (or several experts together) would use.
- **consistency:** this process of information gathering and reasoning are consistent from one audited firm to another. This is very important when several firms are audited, either by several persons of the same company or even by the same person.
- **memory:** all audits performed are kept in memory with the informations they were based on, which allows recollection, comparisons, etc.

In addition to all this, what may be the main advantage is the possibility for a Western firm to send on an auditing task someone who has the capability of a generalist, to apprehend all the topics involved in the audit process, but not necessarily an expertise in any of these fields or a previous knowledge of industrial firms in USSR.

It seems therefore, as we can imagine the system today, that it is worth to proceed on this project.

4.2. Methodology

Setting up the project will require several steps, which will be examined below. On the technical side, the making of the system will consist of three phases:

① Knowledge acquisition

A panel of experts must first be designated, so as to cover all the fields of competence. The members of the Mission, if they agree, can provide most of the expertise; it might be necessary to find some complementary skills in specific areas.

This phase then consists in working with these experts, in order to capture their knowledge about how to audit the industrial capacity of a firm in general and of Soviet firms in particular.

Some of this work can be done in France, some of it will have to take place in the USSR.

It will also be necessary to work with some prospective users and try to determine their needs with more accuracy, in order to design the main features of the system in accordance with these needs.

Then this knowledge is structured, so as to represent it in terms which can be processed by artificial intelligence software techniques.

② Development of the expert system

The expert system consists of three main parts:

- the *knowledge base*, composed of "pieces of knowledge" as mentioned above (which can be rules, objects, decision trees, etc)

- the *inference engine* is the software able to process (select, chain together, etc) these pieces of knowledge and thus reproduce a process of reasoning

- the *interface* is the software which makes it possible for the user to feed the data into the system, to operate it, and read its conclusions.

These parts can be developed with commercial tools (expert system generators or shells, such as Nexpert Object, Intelligence Service, etc) or they can be customized to fit the exact need of the application. It is too early now to decide which technique will be used in this case.

③ Validation

A prototype of the system is used by the experts who contributed to it, to make sure that their knowledge is properly reproduced, and that the system reaches its goal. The validation phase usually leads to reconsider the system in greater or lesser depth, and to work again on the knowledge itself, as well as on the interface.

This phase will involve a test in the USSR.

However, these phases are not really separated and consecutive. Knowledge acquisition, in particular, often takes place all along the development process and knowledge is added into the system in a continuous way, if the technology used for the inference engine allows it.

4.3. Projected time and cost

Although a more complete feasibility study should be done, time and cost evaluation can be approximated from the findings of the Mission.

4.3.1. Time

The phasing of the project could be the following, starting with a "green light" from UNIDO:

- Setting up the project:
 - Completion of the feasibility study
 - Search of partners
 - Designation of experts
 - Administrative work: contracts, etc
 - Total: 3 months

- Knowledge acquisition:
 - Work sessions (30 one-day sessions) with the experts in France
 - Work sessions in USSR (tentatively 3 five-days stays), mostly with the experts
 - Interviews of potential users
 - Total: 8 months

- Development (starting by the middle of previous phase):
 - Organization of the knowledge base
 - (Possibly: development of a specific inference engine)
 - Development of interfaces
 - Total: 6 months

- Validation and adaptations:
 Work sessions (12 one-day sessions) with the experts in France
 Work session (1) in USSR
 Adaptations
 Total: 3 months

Total time (approximated): 16 months

This time is calculated with 1 to 3 engineers or knowledge acquisition experts working on the last three phases. It may vary in a significant proportion according to the final specifications of the project and to the development time actually needed.

4.3.2. Cost

The cost of this project can be analyzed as follows:

- project set-up	FRF 120 000
- French experts (5 experts) 65 days in France 40 days in USSR rate: 6 000 FRF/day total	FRF 630 000
- Soviet experts contribution	FRF 80 000
- knowledge acquisition and engineering (France and USSR) senior engineer: 30 days rate: 6 000 FRF/day junior engineer: 160 days rate: 4 500 FRF/day total	FRF 900 000
- programming 12 man-months rate: 80 000 FRF/month total	FRF 960 000
- travel expenses air fares: FRF 150 000 accommodation and other expenses: FRF 150 000 total	FRF 300 000
- project management	FRF 250 000
Total estimated cost: or	FRF 3 240 000 US \$ 540 000

As for knowledge acquisition and programming, this cost includes all business expenses (computer time, overhead costs, etc).

This estimation is only provisional, since not much is known as of today about actual knowledge acquisition time, specifications, implementation techniques, and other points of importance to the final cost. It should be considered with a 20% margin of adjustment.

4.4. Commercial perspectives

The very idea of this project came from contacts with Western firms confronted with the problem of not been able to find out easily if they could cooperate with the Soviet firms that they were meeting. There is an obvious need for methods, tools, counseling, expertise on this topic.

When the idea of an expert system began to take shape, the returns on this idea were very positive. In short, the most common attitude among the firms which we questioned was: "we are not sure that it is possible to make such a system, but if it is, we are ready to pay for it".

Now that it became clear that it makes sense to think of a software tool to help evaluate Soviet firms, the same contacts are even more encouraging.

Carrying a real market study was beyond the scope of this work, and we have no figures to support this indications. However, it is possible already to point out directions for commercial perspectives (this is related to the next chapter):

- a few firms can be particularly interested in having this product as soon as possible, possibly with some rights attached to an early participation, and will be willing to subscribe for it.
- many firms will be interested in just buying and using the product when it is available.

The former category will be composed of a few firms (tentatively 5 to 10), which can be found by direct approach; the latter could be roughly estimated by figuring the number of firms which are or were engaged into business contacts in the USSR with no predetermined partner, and weighing this figure by a coefficient of "willingness to use" this kind of product, which could be

determined by direct questioning. Taking into account the growth of the business flow between the West and the USSR, it is obvious that a wide and ever widening market is open to such a product.

Moreover, the methodology developed for this product will apply to other contexts. Firms willing to do business with other Eastern countries (Hungary, Czechoslovakia, Poland, etc), or with other countries with a planned economy (Algeria) are likely to run into the same kind of problem, and to be interested in a similar tool, adapted to the specific conditions they encounter.

This software product, or a family of similar products, could then be in a good place among the tools that are used to enhance economic cooperation between countries.

4.5. Organization of the project

Dialogics is ready to take the responsibility of realizing the expert system: setting up a group of experts, organizing the work including trips to USSR, developing the system and delivering it.

Considering the specificity of this product (a software tool oriented at facilitating economic cooperation) and the history of this project, it would be best placed under the auspices of UNIDO : either as a UNIDO - branded product, the rights of which are owned and sold by UNIDO, or, at least, with an UNIDO label giving it recognition for its aim.

Other national or international public organizations can be interested in this project and should be offered to take a part in this project.

Considering the cost of the project, it will probably be necessary to raise private as well as public funds to finance it. Several firms could then be approached as possible partners, on a subscription basis: taking a significant part in the initial funding could entitle them to have a priority in using the system, specific rights of use, etc.

In a second phase, offering it on sale as a regular software product will provide a return on investment for the firms and organizations which have financed it at the beginning.

In any configuration, the part that UNIDO will be willing to take in the project will play a decisive role i.e. starting and realizing it.

5. Annexes

- Presentation of Uralconversia
- Schedule of the visits in Sverdlovsk
- Agreement between Dialogics and Uralconversia

USSR

URAL

CONVERSIA

CO., LTD

"URALCONVERSIA" COMPANY.

URALCONVERSIA WAS FOUNDED IN NOVEMBER 1989. THE FOUNDERS OF THE COMPANY WERE THE URAL DIVISION OF THE USSR ACADEMY OF SCIENCE AND SVERDLOVSK REGIONAL EXECUTIVE COMMITTEE. URALCONVESIA IS AN INDEPENDENT NON-GOVERNMENTAL ORGANIZATION.

URALCOMVERSIA'S PRIMARY AIM IS TO ELABORATE AND REALIZE THE CONVERSIVE NON-GOVERNMENTAL PROGRAMS OF THE SCIENTIFIC & TECHNOLOGICAL DEFENSIVE POTENTIAL TO THE BENEFIT OF THE NATIONAL ECONOMY AND SOCIAL ECONOMIC DEVELOPMENT OF THE COUNTRY INDUSTRIAL REGIONS (ESPECIALLY THE URALS).

MORE THAN 20 COMPANY'S ENTERPRISES-PARTICIPANTS, UNITED ON A VOLUNTARY BASIS, OPERATE UNDER THE DIRECT GUIDANCE OF THE URALCONVERSIA'S AUTHORITY.

AMONG URALCONVERSIA'S PARTICIPANTS THERE ARE:

- RESEACH & PRODUCTIONAL AMALGAMATIONS, DEFENSIVE ENTERPRISES;

-A NUMBER OF ACADEMICAL, DEPARTMENTAL SCIENTIFIC AND EDUCATIONAL INSTITUTES OF SVERDLOVSK, CHELYABINSK, MOSCOW, UKRAINE, SIBERIA AND KAZAKHSTAN.

CREDIT & FINANCIAL ACTIVITY IS PROVIDED WITH THE HELP OF REGIONAL COMMERCIAL BANKS.

INTERNATIONAL CONTACTS AND INFORMATIONAL SUPPORT ARE CARRIED OUT THROUGH THE CHANNELS OF THE INFORMATION AGENCY NOVOSTY (IAN), WHICH IS A PARTICIPANT OF URALCONVERSIA, AND THE UNIDO CENTRE FOR INTERNATIONAL INDUSTRIAL CO-OPERATION IN THE USSR WHERE URALCONVERSIA'S REPRESENTATIVE WORKS AS THE URAL NATIONAL EXPERT.

ZARECHNY, Sverdlovsk Region 624 051 USSR

Tel: 848 874, Faks: Fax 007/34377 - 33837 Phone. 31099, 32048

WORKING SCHEDULE OF EXPERT GROUP

16TH OF APRIL, 1991

- 8-30 BREAKFAST
- 9-00 CONCORDANCE OF EXPERTS WORKING PROGRAM
- 11-00 PRESENTATION OF THE URAL REGION AND SVERDLOVSK REGION (LEGISLATION, PROGRAM OF PRIVATIZATION, FINANCIAL PROBLEMS, INVESTMENT FUND, FOREIGN INVESTORS PARTICIPATION\$)
- 12-00 PRESENTATION OF "CITRON" JOINT-STOCK COMPANY
- 12-30 - 13-00 DINNER
- 13-30 VISIT TO "URAL^{Auto}~~TRANSMAK~~" PLANT
- 16-30 VISIT TO "AUTOMATICA" RESEARCH & PRODUCTION AMALGAMATION
- 19-00 SUPPER
- 19-30 CONTINUATION OF THE URAL REGION PRESENTATION
- 20-00 DISCUSSION OF THE FIRST DAY RESULTS

17TH OF APRIL, 1991

- 7-30 BREAKFAST
- 8-00 DEPARTURE TO PERVOURALSK, VISIT TO PIPE PLANT

- 12-30 DINNER
- 14-00 PRESENTATION OF THE "BOLSHOY URALS" CORPORATION
- 16-00 VISIT TO COMPRESSOR PLANT
- 19-00 SUPPER
- 19-30 DISCUSSION OF THE SECOND DAY RESULTS, WORK OF EXPERTS

18TH OF APRIL, 1991

- 7-30 BREAKFAST
- 8-00 DEPARTURE TO ZARECHNY. VISIT TO BOOT AND SHOE FACTORY
- 11-00 PRESENTATION OF "URALCONVERSIA" TECHNOPSIS
- 13-30 DINNER
- 14-30 VISIT TO THE URAL OPTIC-MECHANICAL PLANT
- 17-00 MEETING WITH ASSOCIATION OF THE SVERDLOVSK REGION
INDUSTRIAL ENTERPRISES
- 19-00 SUPPER
- 19-30 SUMMING UP, SIGNING OF AGREEMENT

19TH OF APRIL, 1991

- 6-30 BREAKFAST
- 7-00 DEPARTURE TO THE AIRPORT
- 8-15 TAKING OFF TO MOSCOW

THE URAL ECONOMIC REGION

URALCONVERSIA OPERATES IN ONE OF THE RUSSIA LARGEST ECONOMIC REGIONS - THE URAL ECONOMIC REGION (UER)

THE REGION IS NAMED AFTER THE RIDGE OF OLD MOUNTAINS, WHICH STRETCHES FOR A DISTANCE OF 2000 KILOMETERS FROM THE ARCTIC OCEAN TO KAZAKHSTAN. ALONG THE EAST FOOT OF THE MOUNTAINS (NEAR SVERDLOVSK) THE SYMBOLIC BORDERLINE BETWEEN EUROPE AND ASIA PASSES.

THE URAL ECONOMIC REGION WITH ITS 824000 SQ.M. OF TERRITORY INCLUDES SVERDLOVSK, PERM, CHELYABINSK, KURGAN, ORENBURG REGIONS AS WELL AS THE UDMURT AND THE BASHKIR REPUBLICS.

ORES ARE THE BASIS OF THE URAL MINERALS. MAINLY THESE ARE IRON-ORES WITH ADMIXTURES OF TITANIUM, NICKEL, CHROME, VANADIUM; COPPER-ORES WITH THE TOUCH OF ZINK, GOLD, SILVER. METAL MADE OF THE URAL ORES IS NOTABLE FOR HIGH QUALITY.

THE URALS IS RICH WITH NON-METALLIC MINERALS SUCH AS ASBESTOS, TALK, GRAPHITE, CORUNDUM. THE URALS IS ALSO FAMED FOR ITS GEMS SUCH AS AMETHYSTS, TOPAZES, ALEXANDRITES, HIGH-QUALITY DIAMONDS, ETC. AND SEMI-PRECIIOUS STONES: JASPER, MARBLE, MOTLEY OPHITES, PATTERNED MALACHITE, ETC. MANY OTHER MINERALS ARE DEVELOPED IN THE URALS.

THE UER IS A HIGHLY DEVELOPED, DIVERSE AND STRUCTURALLY COMPLICATED COMPLEX OF HEAVY INDUSTRY. THERE EXIST ALMOST ALL THE BRANCHES OF NON-FERROUS METALLURGY IN THE URALS. FERROUS AND NON-FERROUS METALLURGY, HEAVY MACHINE ENGINEERING, CHEMICAL INDUSTRY, MINERALS AND GAS EXTRACTION, WOOD LAY-IN AND PROCESSING (40 PERCENT OF THE URALS TERRITORY IS THE TAIGA WOODLANDS) HAVE ALL-UNION SIGNIFICANCE.

THE UER IS ONE OF THE LEADING REGIONS IN THE COUNTRY IN MANUFACTURE OF MACHINE ENGINEERING AND METAL PROCESSING PRODUCTS. HERE THERE IS A LOT OF ENTERPRISES PRODUCING ENERGETIC AND ELECTRO-TECHNICAL EQUIPMENT, MACHINE-TOOLS, AGRICULTURAL MACHINES, ELECTRIC DEVICES, RADIO-EQUIPMENT, REFRIGERATORS, ETC.

THE URALS MAIN INDUSTRIAL CENTRES ARE SVERDLOVSK, PERM, CHELYABINSK, MAGNITOGORSK, ORENBURG, NIZHNY TAGIL, KURGAN, IZHEVSK, UFA.

URALCONVERSIA'S ACTIVITY IS CONSIDERED TO BE A NEW PHENOMENON IN ECONOMY - SO CALLED "CONVERSION FROM BELOW". DEVELOPING AND SUPPLEMENTING THE ACTIONS OF THE STATE BODIES, URALCONVERSIA CREATES LOCAL AND REGIONAL PROGRAMS, WHICH TAKE INTO ACCOUNT HUGE SCIENTIFIC POTENTIAL ACCUMULATED IN THE VARIOUS SCIENTIFIC AND PRODUCTIONAL ORGANIZATIONS AS WELL AS FREE PRODUCTIONAL CAPACITY.

CREATION OF SMALL AND MEDIUM ENTERPRISES, INVOLVING ENERGETIC AND SKILLED SPECIALIST INTO THEM, ALLOW TO REALIZE IN THIS FIELD OF ACTIVITY MOBILE AND ADOPTING TO THE MARKET PRODUCTION OF SCIENCE-CAPACIOUS OUTPUTS, TAKING INTO ACCOUNT REGIONAL NEEDS AND PROBLEMS.

THE MOST IMPORTANT ASPECT OF URALCONVERSIA'S ACTIVITY IS TO ATTRACT FOREIGN PARTNERS TO MUTUALLY BENEFICIAL COOPERATION. FOR EXAMPLE, IT WAS MADE AN AGREEMENT WITH ITM (GERMANY) TO REALIZE THE PROJECT WHICH ENVISAGES EXPERT ASSISTANCE FOR THE CONCRETE URAL DEFENSIVE ENTERPRISES TO MANUFACTURE CIVIL PRODUCTION USING THE EXISTING CAPACITY.

ONE OF URALCONVERSIA'S PROGRAMS IS TO CREATE TECHNOPSIS AND FREE ECONOMICAL AREA WITH ITS CENTRE IN ZARECHNY AND TECHNOLOGICAL PARK ON ITS TERRITORY TO REALIZE EFFECTIVELY URALCONVERSIA'S PROJECTS.

TECHNOPOLIS

THE IDEA TO CREATE TECHNOPSIS AND FREE ECONOMICAL AREA IN ZARECHNY BELONGS TO THE SCIENTISTS OF URALCONVERSIA. BORIS ELTZIN, THE CHAIRMAN OF THE RSFSR SUPREME SOVIET, BEING IN SVERDLOVSK IN AUGUST, 1990 SUPPORTED THIS IDEA. IN APRIL, 1991 PRESIDUM OF SVERDLOVSK REGIONAL SOVIET OF PEOPLE'S DEPUTIES DECIDED TO CREATE TECHNOPSIS WITH THE STATUS OF FREE ECONOMICAL AREA AND SENT THE DOCUMENTS TO THE USSR SUPREME SOVIET AND THE USSR SOVIET OF MINISTERS TO BE CONSIDERED.

PROJECT OF TECHNOLIS IS BEING REALIZED AS AN EXPERIMENTAL SOCIO-ECONOMICAL, SCIENTIFIC-TECHNICAL AND INDUSTRIAL-AGRICULTURAL TERRITORIAL FORMATION IN THE RSFSR AND SVERDLOVSK REGION.

TECHNOLIS IS BEING CREATED FOR:

- PLANNED ENSURING OF SCIENTIFIC, TECHNICAL, ECONOMICAL BREAKTHROUGH IN THE SPHERE OF TECHNOLIS' SPECIALIZATION;
- ACQUIREMENT OF EXPERIENCE AND ITS FUTURE SPREAD IN THE SPHERE OF DEVELOPMENT OF SOCIO-CULTURAL ENVIRONMENT, ADEQUATE TO NEW DEMANDS OF MARKET ECONOMY;
- COMPLEX SOLUTION OF PROBLEMS OF CITY AND VILLAGE TERRITORIES IN BORDERS OF TECHNOLIS;
- ATTRACTING FOREIGN EXPERIENCE, CAPITAL, SCIENTIFIC AND TECHNICAL ATTAINMENTS IN ORDER TO INTEGRATE THE URAL ECONOMY INTO THE INTERNATIONAL FRAMEWORK.

NEW TERRITORIAL FORMATION IS ALLOTTED WITH LOCAL LEGAL STATUS, WHICH STIPULATES TO CREATE GUARANTEES FOR FOREIGN FIRMS, REFERENCIAL TAX CONDITIONS AND REFERENCIAL CUSTOM DUTIES, AS WELL AS TO CREATE STIMULI FOR DEVELOPMENT OF CREDIT & FINANCIAL AND INVESTMENT ACTIVITY.

THE TERRITORY OF TECHNOLIS IS PLANNED TO BE ABOUT 430 SQ.KM. WITH ITS POPULATION 31 THOUSAND PEOPLE APPROXIMATELY AND THE CENTRE - IN ZARECHNY.

ZARECHNY IS LOCATED AT A DISTANCE OF 60 KM FROM SVERDLOVSK, WHICH IS CONSIDERED TO BE ONE OF THE LARGEST INDUSTRIAL, SCIENTIFIC AND CULTURAL CENTRES OF THE URALS. COSY, SCENIC TOWN IS BUILT IN A PINE FOREST ON THE LAKESIDE. ECOLOGICALLY CLEAN. 28 THOUSAND PEOPLE LIVE HERE. MORE THAN HALF OF WORKING PEOPLE ARE HIGH-SKILLED SPECIALISTS. AT A DISTANCE OF 30 KM. FROM ZARECHNY THERE IS A LARGE AIRPORT. ZARECHNY IS CONNECTED WITH SVERDLOVSK BY HIGHWAY AND RAILWAY.

AT A DISTANCE OF 3 KM. FROM ZARECHNY THERE IS A POWER PLANT WITH FAST NEUTRON REACTOR OF 600 MW POWER. IT ALLOWS TO PRODUCE ENERGY-CAPACIOUS PRODUCTION. POWER PLANT OPERATION IS UNDER CONTROL OF IAEA AND IS CONSIDERED BY ITS SPECIALISTS AS THE SAFE AND ECOLOGICALLY CLEAN PRODUCTION.

IN ZARECHNY AND ON THE TECHNOLIS'S TERRITORY THERE IS CREATED BUILDING BASE AND THE BASIS FOR DEVELOPMENT OF AGRO-INDUSTRIAL COMPLEX. THERE ARE ALL THE CONDITIONS TO ORIENTATE TECHNOLIS INDUSTRIAL DEVELOPMENT TOWARDS MANUFACTURE OF SCIENTIFIC-CAPACIOUS PRODUCTS.

TECHNOLOGICAL PARKS

TO CONCENTRATE INTELLECTUAL, MATERIAL AND ECONOMICAL RESOURCES FOR MORE INTENSIVE RESEACHES AND PROVIDING TECHNOLOGICAL INNOVATIONS, URALCONVERSIA' CREATES ON ITS ORGANIZATION, SCIENTIFIC AND FINANCIAL BASIS TWO TECHNOLOGICAL PARKS - INDUSTRIAL AND AGRICULTURAL.

INDUSTRIAL TECHNOLOGICAL PARK IS A TECHNOLIS SCIENTIFIC & TECHNICAL AND ORGANIZING BODY AND IS CONSIDERED TO BE A SYSTEM OF INTER-CONNECTED STRUCTURES WHERE COOPERATION AND EXCHANGE OF IDEAS AND INFORMATION BETWEEN ENTERPRISES AND SCIENTIFIC ORGANIZATIONS IN ORDER TO INTRODUCIT INNOVATIONS INTO PRODUCTION ARE REALIZED. BESIDES A NETWORK OF LABORATORIES, SMALL AND MEDIUM ENTERPRISES ORIENTATED TO MANUFACTURE SCIENCE-CAPACIOUS PRODUCTION IS TO BE ORGANIZED.

THE BASIC FIELDS OF INDUSTRIAL TECHNOPARK'S ACTIVITY ARE:

- NEW CONSTRUCTIONAL AND FUNCTIONAL MATERIALS;
- LASER TECHNOLOGY;
- RADIATION TECHNOLOGY
- DIAGNOSTICS AND NON DESTRUCTIVE TESTING;
- ECOLOGY AND MONITORING OF ENVIRONMENT;
- QUALITY CONTROL, STANDARDIZATION AND CERTIFICATION;
- "CLEAN" ROOMS;
- ELECTRONICS AND COMPUTER SCIENCE;
- NEW TECHNOLOGY AND EQUIPMENT FOR INDUSTRY, MEDICINE AND AGRICULTURE;

AGRICULTURAL TECHNOPARK PROJECT ENVISAGES THE CREATION OF UP-TO-DATE PROCESSING BASIS, INTRODUCTION OF NEW AGRO- AND ZOOTECHNOLOGIES, REGIONAL SPECIALISTS TRAINING.

Signature H.L. 11
M.T.

Accord de cooperation entre les representants des firmes URAL-CONVERSIA U.R.S.S et DIALOGICS FRANCE sous les auspices de l'Organisation des Nations-Unies pour le Developpement Industriel (O.N.U.D.I).

Entre DIALOGICS, representee par M. Alain GARES son Directeur General et URAL CONVERSIA, represente par M. VYACHESLAV A. SAFONOV son Directeur General et en presence de l'O.N.U.D.I., represente par l'Expert international aupres du Centre de Cooperation Industrielle Internationale a Moscou M. Thierry DAVID est conclu l'accord suivant:

Article 1: Du cote de URAL CONVERSIA comme du cote de DIALOGICS existe un interet commun pour le developpement de rapports de cooperation entre les enterprisés de l'Oural et celles des autres pays a travers l'etude des possibilites de fournir a celles-ci des systemes informatiques leur permettant d'evaluer d'eventuelles cooperations.

Article 2: La premiere etape de cette cooperation consistera en une etude de faisabilite de principe, independendemment des considerations liees a la technique informatique pour la realisation d'un tel systeme informatique.

DIALOGICS et URALCONVERSIA avec le groupe des experts internationaux realiseront ensemble cette etude de faisabilite sous les auspices de l'O.N.U.D.I.

Article 3: Dans ce but il est cree un groupe d'experts franco-sovetique comprenant du cote sovetique Messieurs:
- VYACHESLAV A. SAFONOV
- DMITRY M. BORODIN
- SERGEY A. TIMOFEEV
- VYACHESLAV S. LUPAREV
du cote francais, Messieurs:
- ALAIN GARES
- GEAN GAVAZZI
- ARNOLD IZSAK
- HERVE GICQUIAU

La composition de ce groupe peut etre modifiee a l'initiative de chacune des deux arties.

Article 4: Les travaux comprennent les phases suivantes:
- Travail de documentation et de contacts aupres d'entreprises de differentes pays interesses et pre-etude de differents pays interesses et pre-etude de marche.
- Realisation d'une mission a Sverdlovsk

comprenant des visites d'entreprises, des contacts locaux et la constitution des groupe d'experts.
- Travaux realises apres le retour en France pour faire la synthese et arriver a une conclusion sur la faisabilite de principe du systeme informatique. Cette troisieme etape se fera en liaison avec le groupe d'experts franco-sovietique.

Article 5: Si les conclusions de l'etude mentionee a l'article 2 sont positives, DIALOGICS, apres avoir etudie la faisabilite informatique et financiere du projet, s'emploiera a la realisation.
Les conduites finales de realisation et d'exploitation du systeme seront fixees en accord avec tous les partenaires *V* qui seront parties prenantes dans le projet definitif.

Article 6: Au cours de la realisation du projet, les parties prevoient les rencontres, si nesesaire, du groupe d'experts franco-sovietique en France et en U.R.S.S. sur une base de reciprocite (couverture des frais d'hebergement), sous reserve de l'accord des partenaires financiers du projet.

Fait a Sverdlovsk, le 19.04.1991

Pour URAL CONVERSIA,
M. VYACHESLAV A. SAFONOV

Pour DIALOGICS
M. ALAIN GARES

Pour l'O.N.U.D.I.
M. Thierry DAVID

Signature

Signature

Signature
