



Project Agreement

9601

between

THE SCIENCE AND TECHNOLOGY CENTER IN UKRAINE

and

Frantsevich Institute for Problems in Materials Science

Kyiv

OPERATIVE COMMENCEMENT DATE:

_____September 1, 2018_____

The Science and Technology Center in Ukraine (hereinafter referred to as **“the Center”**),
the *Frantsevich Institute for Problems in Materials Science*,

(hereinafter referred together as **“the recipient entity(ies)”**), represented for the purpose of signing this Project Agreement (hereinafter referred to as **“the agreement”**) by their authorized representatives (with the Center and the recipient(s) hereinafter referred to collectively as **“the signatory parties”**),

TAKING INTO ACCOUNT THE FOLLOWING CONSIDERATIONS:

The United States of America, Canada, Sweden and Ukraine signed the agreement establishing the Science and Technology Center in Ukraine on October 25, 1993 (referred to as **“the STCU agreement”**),

The European Communities acceded to the STCU agreement on November 26, 1998, and in so doing, replaced Sweden as a Party to the STCU agreement (hereinafter, “Party” means an entity that was an initial signatory to the STCU agreement or that has acceded to the STCU agreement),

Additional states may accede to the STCU agreement to participate in the activities of the Center (Georgia acceded to the STCU agreement on March 18, 1998; Uzbekistan acceded to the STCU agreement on December 29, 1997; Azerbaijan acceded to the STCU agreement on June 27, 2003; Moldova acceded to the STCU agreement on December 7, 2004),

The Center is a legal entity and has been accredited by the Ministry of Foreign Affairs of Ukraine as an intergovernmental organization with its headquarters in Kyiv,

The recipient(s) is a legal entity within Ukraine (or other CIS state),

The Governing Board of the Center has approved the financing of a project through the Center in the domain covered by the agreement. The *European Communities* (hereinafter referred to as **“the Financing Parties”**) have agreed to provide financial support for such a project,

As set forth in the STCU agreement, funds received by a legal entity in connection with the Center’s projects shall be excluded in determining the profits of that organization for the purpose of tax liability, and funds received by persons in connection with the Center’s projects shall not be included in these person’s taxable incomes,

HAVE AGREED AS FOLLOWS:

Article 1 - Scope of agreement

1.1 The recipient entity(ies) shall carry out the work plan set forth in Annex I according to the conditions of the agreement, subject to the provisions of the STCU agreement, and the statute of the Center (hereinafter referred to as **“the STCU statute”**) which govern in case of conflict. The activities carried out under the agreement are entitled *“Transfer of Ukrainian technologies of production of advanced materials of dual use to the EU. Barriers and Challenges”* (hereinafter referred to as **“the project”**). All Project Activities subject to this Agreement are to be executed by the Recipient, using only funding provided by the Center and/or sources approved by the Center. The recipient entity(ies) shall notify the Center immediately if it and/or other participating institutions determine at any time to utilize any other funding sources to execute such Project activities.

1.2 Subject to any amendments or exclusions by any other articles, the detailed terms of the agreement are specified in the annexes which form an integral part of the agreement. In the case of conflict between any provision in the annexes and any other provision of the agreement, the latter shall prevail.

Article 2 - Duration of the project

The duration of the project will be 48 months from the first of the month following the date this Agreement is signed by the STCU Executive Director, or from the first of the present month if this agreement is signed by the fifteen of the present month inclusively (hereinafter referred to as **“the operative commencement date”**).

Article 3 - Organizational structure of the project

3.1 The scope of work for each institution which takes part in the project, the organizational structure of the project, as well as financial requirements of such an institution, are attributed and stipulated in Annex I. The *Frantsevich Institute for Problems in Materials Science* (hereinafter referred to as **“the coordinating institution”**) and the other institutions participating in the agreement will hereinafter be referred to collectively as **“participating institutions.”**

3.2 In the agreement, the authorized representatives of participating institutions, the project manager and the participating institution managers who are identified in Annex I, shall be responsible for the scientific, financial, personnel, and administrative management of the project in accordance with the terms and conditions of the agreement. The project manager from the coordinating institution shall be responsible for all aspects of the project including authorization of requests for payments associated with fulfilling the work plan, coordination between participating institutions, and the submission of all documents on behalf of the recipient(s) to the Center, whereas the participating institution managers shall be responsible for work carried out by their respective participating institutions and the submission of documents on behalf of their respective participating institution to the coordinating institution.

3.3 In the agreement, the authorized representatives of participating institutions, the directors, shall be responsible for general administrative and legal agreement’s support in accordance with the terms and conditions of this agreement. The directors hereby accept the project manager, the participating institution managers and the project grantees; agree that the project will be performed on the premises of their respective institutions and that necessary facilities and services will be made available to support the project manager, the participating institution managers and the project grantees during the performance of the project.

3.4 The recipient entity(ies) is bound by this agreement to take all necessary and reasonable precautions to make safe all money and property according to this agreement and bears responsibility for any loss or damage of items provided. The project manager and the participating institutions managers shall have exclusive rights to utilize all equipment and materials provided to or procured by respective participating institution during the term of the project.

Article 4 - Financial contribution of the Center

4.1 The total cost of the project to the Center shall not exceed €120,000. This total includes the cost of items described in Articles 4.2, 4.3, and 4.6 below.

4.2 The Center shall make grant payments directly to the project grantees. The amount of such payments is estimated to be €91,264. This total amount may be increased with the concurrence of the Center project coordinator provided that (1) such increase results from the additional time worked on the project rather than an increase in the rate of pay and (2) an offsetting reduction is made to the cost of items in article 4.3.

4.3 The Center shall pay for items ordered by the project manager on behalf of the participating institutions including: equipment, materials, other direct costs and travel. The amount of such payments is estimated to be €23,008.

4.4 Equipment purchased in accordance with Article 4.3 will be preserved, accounted for, and maintained throughout the term of the project by the participating institutions. Such equipment shall be used only in areas that are open for monitoring and auditing in accordance with Article 9.

4.5 Title to equipment purchased in accordance with Article 4.3 with an acquisition per item cost of less than \$2,500 will vest in the participating institution at the time of delivery. Title to all other equipment will remain with the Center until termination, cessation, or completion of the project, at which time title will be vested in the participating institution unless prior to or on that date the Center informs the participating institution of its intention to retain title to the equipment.

If the Center retains title to the equipment, the Center will provide instructions to the participating institution for disposition of the equipment. The Center will pay the cost of disposing of such equipment.

4.6 The Center will pay overhead to participating institutions, represented by their respective directors, in an amount not to exceed 10% of the direct project costs for each participating institution.

Article 5 - Cash payments by the Center

5.1 The Center shall pay its financial contribution through special bank accounts established by the Center.

5.2 Pursuant to Article 4.2, the Center shall make grant payments directly to private bank accounts of the project grantees in accordance with Letters of agreement between the Center and with each project grantee.

Each project grantee shall personally withdraw grant payments from his or her bank account. The use of a power of attorney to allow one individual to withdraw grant payments from the individual accounts of the project grantees is not permitted without the express permission of the Executive Director of the Center.

The Center shall make the advance payment, which is one third of the first quarter grant payment to the project grantees, as soon as possible following the operative commencement date.

The Center shall make quarterly grant payments in accordance with the payment level rates set forth in Annex I and the amount of time devoted to the project by each grantee. Such payments are made after approval by the Center the cost statement for the last completed quarter. The Center, at its option, may require the project manager to provide completed time cards certified by the project manager to the Center on a monthly basis to support the time devoted to the project.

Since the project grantees will remain employees of the participating institutions, the Center's act of direct grant payments to the project grantees will not transfer from the participating institutions to the Center any liability for damages caused by the project grantees during execution of the projects or any liability for damages to the project grantees during execution of the project.

5.3 Pursuant to Article 4.3, the Center shall make current payments directly to vendors in amounts which are estimated in Annex I. Such payments shall be based on vendor invoices and other documents delivered to the Center with written requests from the project manager.

5.4 Pursuant to Article 4.6, the Center shall make payments of overhead to the participating institutions represented by their respective directors as a fixed payment.

One half of the overhead will be paid after approval of quarterly progress and cost statements by the Center. A retention shall be made by the Center of the remaining one half of the allowable overhead for the project. The retention shall be released to the participating institutions represented by their respective directors within one month following the approval by the Center of the last technical or financial document or other deliverable required by the agreement.

5.5 Within Ukraine, all cash payments will be made in the national currency of Ukraine. Conversion of US dollars to the national currency of Ukraine will be according to the exchange rate of the Interbank Rate of Ukraine. Within Georgia, Uzbekistan, Azerbaijan, and Moldova, all cash payments will be made in U.S. Dollars or Euros where possible.

Article 6 - Cost Statements by the recipient

6.1 Quarterly cost statements (consolidated by the project manager and for each participating institution) covering each three-month period shall be submitted within 15 days by the project manager to the Center in English and Ukrainian (Russian optional, if the project is located in other CIS State), in hard copy and in electronic format on disk (Microsoft Word and Excel). The statements shall be appended to the relevant progress reports specified in Article 7. The format of the cost statements will be provided by the Center. The quarterly cost statements will include a representation that all project activities conducted by the Recipient during the preceding quarter were funded only with funding provided by the Center and that no other source of funding was utilized in carrying out such activities. If cost statements are not submitted on time, the Center may request in writing its submission. If the Center does not receive the submission within twenty days after such a written request, the Center may consider the previously claimed costs to be final and determine to make no further reimbursement.

Article 7 - Reports and other project outputs

7.1 The recipient entity(ies), represented by the project manager, shall submit the following reports in accordance with the format prescribed in Annex III, in English and Ukrainian (Russian optional, if the project is located in other CIS State), in hard copy and in electronic format on disk (Microsoft Word and Excel):

(a) Quarterly progress reports covering each three-month period following operative commencement date will be submitted within one month after the end of each reporting period. Quarterly progress reports are not required on the dates when annual progress reports are due.

(b) Technical reports will be submitted within one month after the significant results are achieved according to the milestones defined in work schedule (see Section 9 of Annex I).

(c) Annual reports will be submitted within one month following the anniversary date of the operative commencement date and will cover the previous twelve months of project activity.

(d) A draft final report will be submitted within two months of the completion of the project work plan, cessation or termination of the agreement, or the agreed completion date of the agreement, whichever will be the earliest. The Center will submit to the recipient(s) its evaluation of the work performed and the draft final report within two months after receipt by the Center of the report. The definitive final report will then be submitted to the Center within one month following the receipt of the Center's evaluation and will take into account the Center's evaluation. If the Center does not submit an evaluation within two months, the draft final report shall be considered the definitive final report.

(e) All reports shall be submitted by the project manager from the coordinating institution, as mutually agreed with all participating institutions, prepared in a suitable form for publication and satisfactory to the Center.

(f) The beginning of each period defined in accordance with (a), (b), (c), (d) of this article can be shifted by corresponding number of months, if the first advance payment will be late more than one month after the operative commencement date.

7.2 For the purposes of the agreement, "deliverables" are defined as any significant outputs of the project to be submitted in accordance with Annexes I, II, and III.

Article 8 - Ownership and exploitation of results

8.1 When intellectual property arises under this agreement, the entity which creates it will inform the other entities participating in the project and the Center's Executive Director, who will inform the Parties in a timely fashion.

8.2 The recipient entity(ies) shall hold all rights worldwide to intellectual property arising from this agreement, as set forth in Part E of Annex II, except for the rights in the Financing Party's territory enumerated in Article 15.2 of Annex II.

8.3 Exploitation of results shall be limited to applications for peaceful purposes. In this regard, the participating institutions shall ensure that any results which could result in concerns over proliferation of weapons technology and transfer of sensitive technologies will be treated in accordance with relevant laws of Recipient country(s) and international agreements and conventions to which Recipient country(s) is(are) a party.

Article 9 - Auditing and monitoring

9.1 Access by the Center and Financing Parties to carry out on-site monitoring of all activities of the project shall be granted by the participating institutions, and information and assistance shall be given for the verification and evaluation of the project activities as set out in Annex II.

9.2 Audits of costs may be carried out by the Center and the Financing Parties as specified in Annex II.

Article 10 - Amendments, variations, or additions

The provisions of the agreement and its annexes may be amended or supplemented by means of a written agreement signed by authorized representatives of the signatory parties.

Article 11 - Disputes

Disputes arising during performance of the agreement including, in particular, (i) a claim by the recipient entity(ies) for any payments deemed due; (ii) an interpretation of a provision of the agreement; or (iii) a request for relief or approval related to the agreement, shall be subject to the following procedure.

The recipient entity(ies), represented by the project manager, shall submit any claim, demand, or request in writing to the Executive Director. The written decision of the Center shall be delivered to the project manager within four weeks of the receipt of the submission.

Exceptionally, the coordinating institution may appeal the Center's decision in writing through the Executive Director of the Center to the Governing Board of the Center within four weeks of the communication of the Center's decision.

The decision of the Governing Board shall be final and binding. Pending the final settlement of disputes, the participating institutions shall, nevertheless, proceed diligently with the performance of the agreement.

Article 12 - Liability

12.1 The Center shall not be liable for any material loss, damage, or injury of any nature arising from, or in connection with, the performance of the work under the agreement solely by virtue of financing the project, including liability from direct grant payments to project grantees as set forth in Article 5.2.

- 12.2 The Center shall not be liable to the participating institutions or third parties for claims arising from
- (a) the publication or transmission of any report in accordance with Articles 4 and 13 of Annex II,
 - (b) the application of the contents of any report by a third party, or
 - (c) the handling or use of products which result from the project.

Article 13 - Termination of the agreement and Issuance of Stop Work Orders

13.1 The Center may terminate the agreement by a written notice to the recipient entity(ies), with the termination to be effective after 30 days or a longer period as determined by the Center following receipt of the notice by the recipient entity(ies). The project manager, with approval of the Center, may terminate the participation of a participating institution by a written notice, with the termination to be effective after 30 days or a longer period as determined by the Center following receipt of the notice by the recipient. Notwithstanding any termination, the submission of reports and cost statements covering the period up to termination shall be required.

13.2 The agreement may be terminated due to force majeure or to other factor beyond the control of the participating institutions.

13.3 If the agreement is terminated pursuant to paragraphs 13.1 or 13.2, costs shall be limited to the allowable costs incurred by the participating institutions prior to the termination and such other costs as the Center considers to be fair and reasonable having regard to commitments which have been reasonably entered into and which cannot be canceled or avoided.

The participating institutions shall comply with the directions of the Center in the termination notice to reduce or mitigate these costs.

Notwithstanding any termination, the following provisions of the agreement will continue to apply: Article 11 (Disputes); Article 7 and Article 8.2 (Equipment) of Annex II; and Part E of Annex II (Intellectual Property Rights).

13.4 Furthermore, if the Center terminates the agreement because of actions by the participating institutions which obviously violate the national laws of Recipient country(s) or which obviously are contrary to the stated objectives of the Center or to other conditions specified under the STCU agreement or the STCU statute, the participating institutions shall, upon demand by the Center, promptly return all payments and goods previously provided to the participating institutions. Notwithstanding the provisions of Article 13.1, termination pursuant to this paragraph shall be effective immediately upon receipt of the written notification of the termination by the recipient entity(ies). Notwithstanding any termination, Part E of Annex II will continue to apply.

13.5 If the Center determines that the participating institutions have violated (1) the national laws of Recipient country(s), (2) the objectives of the center as stated in the STCU agreement or the STCU statute, or (3) the terms and conditions of this project agreement, the Center shall have the right to issue a stop work order to the project manager and the participating institutions. Upon issuance of a stop work order, all work on the project will cease immediately. Project grantees will not be paid for work performed during the period that the stop work order is issued, the Center will review the circumstances which caused the stop work order to be issued and determine what action must be taken to remedy the situation. If and when the situation is remedied, the Center shall cancel the stop work order and thereby allow work on the project to resume. Alternatively, the Center may determine that the situation is so severe that the project agreement should be terminated pursuant to paragraph 13.4.

Article 14 - Annexes

As specified in Article 1.2, the Annexes are an integral part of the Agreement. They are:

- Annex I - Work plan
- Annex II - General conditions
- Annex III - Formats for progress and technical reports

Article 15 - Entry into force of the agreement

This agreement shall enter into force on the operative commencement date.

Prepared in Kyiv in the English and Ukrainian languages (Russian optional, if the project is located only in other CIS State). In the event of inconsistencies between the English and other texts, the English text shall take precedence.

<p>For the Center</p>  <p>Curtis Bjelajac Executive Director The Science and Technology Center in Ukraine</p> <p>Date of signing(REQUIRED): <u>16/7/18</u></p> 	<p>For the participating institution</p>  <p>Iegor Kartuzov Frantsevich Institute for Problems in Materials Science</p> <p>Approved</p> <p>Stamp Place</p>  <p>Yuri Solomin Director Frantsevich Institute for Problems in Materials Science</p> <p>Date of signing(REQUIRED):</p>
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1 Project Information

1.1 Project Title: Transfer of Ukrainian technologies of production of advanced materials of dual use to the EU. Barriers and Challenges

1.2 Project Science and Technology Areas:

Primary: Material Sciences
Secondary: Industrial Technologies

1.3 Project Manager:

Name: Kartuzov Iegor Valerievich (PhD)
Phone: (+380.44) 424-01-02
Fax: (+380.44) 424-21-31
E-mail: egorkartuzov@gmail.com

1.4 Coordinating Institution:

Name: Frantsevich Institute for Problems in Materials Science of National Academy of Sciences of Ukraine
Address: 03680, 3, Krzhyzhanovsky St, Kiev, Ukraine

1.5 Project location and facilities:

Frantsevich Institute for Problems in Materials Science, National Academy of Sciences of Ukraine

2 Detailed Description of Work Plan

2.1 Introduction

What is the problem?

The intricate nature of dual-use technologies and their potential for enhancing Ukrainian and European economies make them fundamental to both R&D and debate. It should be mentioned that there has never been a clearly defined line between defense and civil research and this border is still strongly blurred. Found in an increasing number of industrial sectors ranging from nuclear and materials science, electronics, etc., intangible technologies must receive increased attention from developers, policy and law makers. The blurring of civilian and defense industrial bases and the increase in issues with uncertain dual-use features make distinguishing between civilian and military products and platforms more difficult and complicate the issues of exports and technology transfers.

Mechanisms for actual viz. commercial transfer of production technologies of advanced materials of dual-use virtually does not exist and there are strong political, economic, security and legal reasons for this. Nevertheless, despite the above the transfer of intangible technologies and conditions associated with it have continued to ignite a huge interest in the last decade. The process of technology transfer as a whole is neither simple nor systematic and far from being perfect, especially when it deals with dual-use technologies and at present reduced to a short relationship between supplier/recipient only.

2.1 Literature Search

What are other people doing?

This work is a pioneer attempt to trace the whole chain and a relationship between a supplier (Ukraine) and a recipient (the EU countries) of intangible technologies, which is based on rigorous control regulations which, in many instances, provide a certain background and to some extent provoke conflicting political situations and other obstacles.

How are their results being applied?

As above said this effort is a pioneer one that will help to trace and understand the whole chain and a relationship between a supplier (Ukraine) and a recipient (the EU countries) of intangible technologies. A certain background as to transfer of dual-use technologies gained by IPMS developers to other countries than the EU will be provided and analyzed.

2.3 Purpose and Objective

What are we are going to do?

This PhD effort will therefore classify barriers of transfer of intangible technologies. Accounting for the barriers analyzed from literature sources and author's experience gained during more than 25 years of R&D dual-use international projects execution, the work are to highlight the barriers faced in real life during the above said period; to evaluate specific, progressive steps required to achieve an effective cooperation between the supplier and the recipient of materials science technologies of dual-use; to assess measures that would offer more transparency and openness in transfer of dual-use technologies and thus bring the end-use to greater predictability; and to examine measures which could build-up more confidence and security between Ukraine and the EU, while materials science technologies of dual-use are concerned; as well as to highlight and evaluate key positions for the methodology as to a technology scientific escort and adaptation to raw material of country recipient after the transfer.

What is the objective?

To fulfill and defense PhD work aimed at definition of official transfer mechanism of technologies of dual-use. The effort is to systemize and specify available knowledge about regularities and mechanisms of transfer of intangible materials science technologies as well as reveal technology transfer barriers between Ukraine and the EU.

2.4 Expected Significance

What's new?

It would be a good to exchange the experience and knowledge gained by IPMS team in development, transfer and use of materials science technologies of dual-use and the team from Liege University, department of political science which is heavily involved in theoretical background of legislation and standard issues associated with that. This effort will for the first time unite the team from Ukraine which develops and transfers the technologies and the team from the EU which develops theoretical backgrounds and control regulations for this technology transfer. This work will help share the knowledge gained by

both teams and to clarify the problems popped up while transferring the dual-use technology and will disclose the legislation obstacles faced by the team of developers.

2.5 Organization, Qualification and Staffing

Who are we?

1. Dr. Iegor Kartuzov, (PI of this project) Deputy of Head of Technology Transfer Department & scientist of the Department N18, IPMS NASU He will do theoretical research, analytical reviews required for this PhD effort and will take care of all issues associated with the Project Administrative Management and the Project itself. Dr. I. Kartuzov speaks English fluently and has gained a huge experience in management of international materials science projects. He is a co-author of more than 30 research papers published in referred journals and 6 patents.

How does this project relates to our other work?

This effort explores a concept of defense conversion program announced in Ukraine in 1990 which made the Ukraine a potential attractive partner as to the intangible technologies supply and entailed transfer of

intangible technologies. As a corollary of conversion, this work also explores a concept of dual-use

technology transfer and control regulations faced. A brief overview of Ukrainian and the EU applicable legislation provides some insights how to make the process of technology transfer more realistic, transparent and friendly for the countries of supplier and recipient. Thus this PhD effort will therefore classify technology transfer barriers. Accounting for the barriers analyzed from literature sources and author's experience gained during more than 25 years of R&D dual-use projects execution, the author present barriers met in practice during the above said period; evaluate specific, progressive steps required to achieve an effective cooperation between the supplier and the recipient of materials science technologies of dual-use; assess measures that would offer more transparency and openness in transfer of dual-use technologies and thus bring the end-use to greater predictability; examine measures which could build-up more confidence and security between Ukraine and the EU, while materials science technologies of dual-use are concerned; highlight and evaluate key positions for the methodology as to a technology scientific escort and adaptation to raw material of country recipient after the transfer

2.6 Expected results

What will be done in the framework of this project?

To obtain PhD degree in political or economic sciences, the work will imply the transfer of technologies of dual-use; systematization and specification of available knowledge about regularities and mechanisms of transfer of materials science technologies in Ukraine and the EU; retracements of the whole chain and provide a better understanding of a relationship between a supplier (Ukraine) and a recipient (the EU countries) of intangible technologies.

In addition to quarterly progress reports to be delivered in accordance with Article 4, the following technical schedule activities/events are considered the deliverables under the Agreement:

Deliverables	Due date (by the end of Month # __)	Point (address) of delivery
Annual report for the 1 st year	The end of 12 th month	Liege University
Annual report for the 2 nd year	The end of 24 th month	Liege University
Annual report for the 3 rd year	The end of 36 th month	Liege University
PhD defense	The end of 48 th month	Liege University

What's next?

This PhD work will clarify the mechanism of transfer of technologies of dual-use between Ukraine and the EU; order and specify the available knowledge about regularities and mechanisms of transfer of materials science technologies in Ukraine and the EU; and provide a better understanding of a relationship between a supplier (Ukraine) and a recipient (the EU countries) of intangible technologies. The obtained knowledge will help the other developers of dual-use technologies to transfer those from Ukraine to the European Union partners.

2.7 Scope of activities

How will the investigation be organized?

This PhD work has to be done during four years thus the first year is to be devoted to analytical review and data collection. The second year will address the methodology development and data collection as well. The third is to investigate the existing technology transfer control regimes in Ukraine and the EU. The last year will summarize the obtained knowledge into PhD work. The work will be performed both in IPMS NASU and Liege University at the Department of Political Sciences. The indicative schedule is as follows:

	Jan	Feb.	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Year 2018									Liege	Liege	IPMS	IPMS
Year 2019	Liege	Liege	Liege	Liege	Liege	IPMS	IPMS	IPMS	Liege	Liege	Liege	Liege
Year 2020	IPMS	Liege	Liege	Liege	IPMS	IPMS	IPMS	IPMS	Liege	Liege	Liege	Liege
Year 2021	Liege	Liege	Liege	Liege	Liege	IPMS	IPMS	IPMS	Liege	Liege	Liege	Liege
Year 2022	Liege	Liege	Liege	Liege	Liege	IPMS	IPMS	IPMS	Liege			

2.8 Technical Methodology

How will the science be done?

The objectives set forth above are not that easy to arrive. After all, the debates about intangible technologies are not new and its complexities are also quite well known in Ukraine and the European Union. Thus, it is therefore necessary to clarify first what materials science technologies are and what their dual use may entail. Understanding those technical peculiarities and intricacies are of vital importance as for example: ultra-high temperature ceramic (UHTC) can be used both for parts of ballistic missiles, other space applications and simultaneously may be employed for civil and commercial burning systems (thermal power plants (coal afterburning)); another example, superhard ceramics can be employed for both personal ballistic and vehicles protection and for cutting tools as well? Unfortunately, the importance of this question is not always appreciated and given a proper attention. At the same time a survey as to which the EU countries are most likely to export or import materials science technologies is also required. Such an exercise would be valuable in identifying those countries which assigned their materials science technologies to military sector, since they are often the strongest offerors and proponents of control regulations related to a technology transfer.

In view of the need to evaluate and clarify the political and strategic implications of the impact of transfer of materials science technologies on international security, this thesis highlights the consequences that the dual use of materials science technologies may have on spread of weapons technologies itself.

More specifically, this effort is to rate and clarify some of ramifications which are often discussed in the context of non-proliferation debate of military technologies and national security.

At the same time, the focus of this work is to examine existing and future technology transfer control regulations. First of all, it is important to study technology transfer issues and the role of Ukrainian and the EU legislation system. For example, central to the control regime debate is the discussion on evolution, or lack of the existing legislation covering dual-use technologies, as well as a discussion on their orientation and scope. Which countries developed or still develop the legislative measures in this area better? Does this really work and sound in practice, and to what extent? Second, at a time of fundamental change in the nature and order of international relations, the wisdom of *ad hoc* control regimes must not escape scrutiny. Although experts are very much aware of these problems, the future of control regulations remains blurred and uncertain, so what are their potential implications for international security? Hence, a reassessment of the problems surrounding existing control regulations have to be made – both in terms of their potential improvement and/or possible new universal multilateral agreements among the countries involved in technology transfer. This further argues the need for new international mechanisms to ensure the transfer of dual-use materials science technologies, while not powering proliferation opportunities for weapon systems. This argument is not just ideological. It could constitute the basis of a policy that could be implemented if certain specific initiatives are taken. To build confidence between supplier and recipient countries of intangible technologies, adherence to bilateral agreements on materials science technologies, limitation agreements on weapons of mass destruction, and other measures would offer elevated and required transparency in development of materials science technologies of tomorrow. Of course, the roles of both supplier (Ukraine) and recipient (EU) and *visa versa* in unilateral, reciprocal measures would have to be carefully evaluated. Concession issues would need to be given the highest priority due to improve predictability and creation of mechanisms of crisis management and resolution.

There should also be an agreement to establish a transparent dialogue between the supplier's and the recipient countries, to enable mutual political objectives to be complemented by compliance and enforcement procedures. Central to the debate would be a discussion of fundamental and practical questions associated with transfer of dual-use technologies. For example: is it appropriate to undertake multilateral negotiations? Then if so, in what form and what type they should be?

However, scrutinizing ways of creating new relationships between supplier and recipient in transfer of dual-use materials science technologies can easily be a zero-sum-game endeavor. The challenge is to initiate impartial and innovative thinking. Steps towards cooperation simply for the sake of ensuring the transfer of dual-use technologies are not the answer. Moreover, while international organizations have their role, they are not a panacea, as the comprehensive test ban treaty discussions have shown.

In conclusion, the question of whether there should be a better restructuring of dual-use technology transfer would now appear to be irrelevant without a better understanding of present relationship between Ukraine and EU on the vital materials science sector of national security debate. The quest for improved relationships in respect of technology transfer and dual use must first start with an assessment of political, military, technical, and economic implications of materials science technologies. Any such assessment must therefore consider the relevance that access to these technologies has for different geopolitical situations. Only by tight and trustful cooperation can the supplier/recipient relationship be established in a sound, durable and open manner. However, any such cooperation must be reinforced by solid and transparent agreements to ensure transparency and predictability on issues which directly affect the states' security and development.

This thesis effort should investigate the interests of both supplier and recipient countries which can best be served not only through strict control regulations but through joint cooperative measures, because it is the

most efficient way to control civil use of materials science technologies, while at the same time ensuring their successful transfer.

2.9 Sustainability Planning

This PhD work will address the „market“ of dual-use technologies, legislation field and other issues associated with that in Ukraine and will classify its “underwater rocks” and evaluate successful stories if any exists since 1990.

Which “Market will we study?”

Needless to say that the „market“ of dual-use technologies is a very specific and sensitive in each country not only in Ukraine and the EU. This work will address issues associated with this „market“ in Ukraine and will classify its “underwater rocks” and evaluate successful stories if any exists since 1990.

What is our specific market research objective?

The objective is to evaluate the „market“ of intangible technologies in Ukraine and the main obstacles and controversy (organizational, economical, political, etc.) faced while transferring those into the EU. The succesful stories, if any, shall be evaluated and analyzed.

What are we going to do?

1. classify technology transfer barriers, namely: technical, organizational, economic and system barriers. Accounting for barriers analyzed from literature sources and author’s experience gained during more than 25 years of R&D dual-use projects execution and tight cooperation with the US Army Research Laboratory, Air Force, Navy and industrial companies of the USA, the author present barriers that he met in practice during the above said period.
2. evaluate specific, progressive steps required to achieve an effective cooperation between supplier and recipient of materials science technologies;
3. assess measures that would offer more transparency and openness in transfer of dual-se technologies and thus bring end-use to greater predictability; and
4. examine measures which could build-up more confidence and security between Ukraine and EU, while materials science technologies of dual-use are concerned.
5. highlight and evaluate key positions for the methodology as to a technology scientific escort and adaptation to raw material of country recipient after the transfer.

What will result?

The result of this effort falls diretly from its main objective and is as follows, to fulfill and defense PhD work aimed at definition of official transfer mechanism of technologies of dual-use. The available knowledge about regularities and mechanisms of transfer of intangible materials science technologies as well technology transfer barriers between Ukraine and the EU shall be revealed, systemized and specified.

3. Work schedule

Definite stages of the project implementation are represented in matrix diagram in Table 1.

Table 2 graphically displays timing and duration of the stages involved, as well as interdependence of the stages.

4. Personnel commitments

Table 3 displays personnel commitments for the project implementation.

5. Goods, Services, and Other Direct Costs

Tables 4 , 5, and 6 display the equipment, materials, services, and other direct costs to be purchased for the project.

6. Travels

Table 7 displays the costs necessary for travel outside and within country of residence.

7. Financial summary

Tables 8 and 9 display aggregate financial information and define the first advanced payment.

8. List of personnel

Table 10 contains detailed information about each individual person involved.

9 Allocation of the project budget among participating institutions *(for more than one participating institution only)*

Supplementary tables S8 and S9 display estimated expenditures by each participating institution separately.

Table 8. Financial Summary / Таблица 8. Зведена фінансова інформація

#	Item	Qtr1	Qtr2	Qtr3	Qtr4	Qtr5	Qtr6	Qtr7	Qtr8	Qtr9	Qtr10	Qtr11	Qtr12	Q13	Q14	Q15	Q16	Total
1	Days - FWS	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	992
2	Days - NFWS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Days:	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	992
1	Grants - FWS	5704	5704	5704	5704	5704	5704	5704	5704	5704	5704	5704	5704	5704	5704	5704	5704	91,264
2	Grants - NFWS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Grants total:	5704	5704	5704	5704	5704	5704	5704	5704	5704	5704	5704	5704	5704	5704	5704	5704	91,264
4	Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Materials	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Other Direct Costs	3000	0	0	0	2000	0	0	0	2000	0	0	0	2000	0	0	0	9,000
7	Travel International	2728	0	0	0	3760	0	0	0	3760	0	0	0	3760	0	0	0	14,008
8	Travel Domestic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Travel Total:	2728	0	0	0	3760	0	0	0	3760	0	0	0	3760	0	0	0	14,008
10	Non-Labor Expenses:	5728	0	0	0	5760	0	0	0	5760	0	0	0	5760	0	0	0	23,008
11	Total Expenses:	11432	5704	5704	5704	11464	5704	5704	5704	11464	5704	5704	5704	11464	5704	5704	5704	114272
12	Overhead for the Institution	358	358	358	358	358	358	358	358	358	358	358	358	358	358	358	358	5728
13	Total Project Cost:	11,790	6,062	6,062	6,062	11,822	6,062	6,062	6,062	11,822	6,062	6,062	6,062	11,822	6,062	6,062	6,062	120,000

Overhead for the Institution(s):	5
Project duration (quarters):	16

Annex II General Conditions

Part A Implementation of the work

Article 1	General provisions
Article 2	Justification of changes
Article 3	Monitoring of the Work
Article 4	Reports
Article 5	Completion or expiration of the agreement

Part B Payments

Article 6	Payments by the Center to the recipient(s)
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Part C Allowable costs

Article 7	Accounting principles, allowable costs, and transfer of costs
Article 8	Direct costs
Article 9	Overhead
Article 10	Retainage
Article 11	Costs not allowed

Part D Justification of cost and auditing

Article 12	Books of account and documentation
Article 13	Auditing

Part E Intellectual Property Rights

Article 14	Definitions
Article 15	Ownership and License rights
Article 16	Promotion of technology and information on results Confidentiality Information and technology promotion
Article 17	Reporting of inventions
Article 18	Notification of limitations, restrictions, and obligations
Article 19	Duration and implementation of Part E

Part A - Implementation of the work.

Article 1 - General provisions

1.1 The participating institutions shall make their best efforts to achieve the objectives of the project and shall comply with all Ukrainian laws applicable to the project.

1.2 The participating institutions shall, in particular, comply with all laws and regulations applicable to safety.

1.3 The recipient(s) shall notify the Center's project representative without delay of any event or circumstance which may materially affect the project.

Article 2 – Justification of changes

2.1 The project manager, on behalf of participating institutions, shall submit any required change in the original estimates of expenditures as set forth in Annex I.

2.2 The original estimates of expenditures may be adjusted by the project manager between categories with the prior approval of the Center, except for reductions in personnel costs, and provided that the transfers do not fundamentally alter the scope or content of the project.

2.3 The project manager may increase the time commitments of any individual by up to 10 percent during a quarter without approval of the Center but may not change any daily rate without approval of the Center. The project manager may request more significant changes in personnel commitments; including changes in the names of personnel. Such significant changes must be fully justified in writing. Changes in scientific personnel must provide for the new individual participants to have technical credentials and previous weapons experience comparable to those of the individual participants they replace.

2.4 The project manager may request changes in procurements, services, travels, or other direct costs, against estimated expenditures as set forth in Annex I. Significant changes must be fully justified in writing with references to the related activities in the technical schedule, and provided that the transfers do not fundamentally alter the scope or content of the project.

Article 3 - Monitoring of the work

3.1 The Center, or its representatives, shall:

(a) Have access to portions of facilities where the project is being carried out and to all equipment, documentation, information, data systems, materials, supplies, personnel, and services which concern the project for monitoring the progress of the project as described in Annex I.

(b) Be provided with technical and cost information concerning the management and progress of the project requested at any time.

(c) Give the institution not less than 20 days advance notice of any intended on-site monitoring of the project.

3.2 Each financing party, or its representatives, shall be entitled to the same rights as the Center under Article 3.1 of this annex should they choose to exercise them through the Center.

3.3 The participating institutions have the right to protect those portions of facilities that are not related to the project.

3.4 After completion or termination of the project, the participating institutions may utilize the facility or portion of the facility previously used for the project for other work. However, all documentation and records, including those associated with equipment, data systems, materials, supplies, and services utilized on the project must be maintained and made available for review by the Center, the financing parties, or their representatives, for two years following the project's completion or termination.

3.5 The coordinating institution shall, if requested by the Center, participate and assist in meetings to review or evaluate the project during the lifetime of the project.

Article 4 - Reports

4.1 The recipient(s), represented by the project manager, shall submit the following reports, in English and Ukrainian (Russian optional, if the project is located in other CIS State), in hard copy and in electronic format on disk (Microsoft Word and Excel), to the Center for approval:

- (a) Periodic cost statements and progress reports, as required in Articles 6 and 7 of the agreement;
- (b) Technical reports containing a description of the significant results according to the Milestones defined in the work schedule (see section 9 of Annex I);
- (c) Annual reports, as required in Article 7;
- (d) A final report suitable for publication, covering all the work, objectives, results, and conclusions of the project, including a suitable summary of all these aspects, and
- (e) Reports, as mutually agreed, prepared in a suitable form for publication and satisfactory to the Center.

4.2 The recipient(s), represented by the project manager, shall submit all reports and other deliverables specified in the agreement.

4.3 The recipient(s) should clearly identify and mark any reports or portions of reports that contain confidential business information as defined in Part E, Article 14.4 of this annex. The recipient(s) also may include a suitable disclaimer in any report against possible claims by third parties.

Article 5 - Completion or expiration of the agreement

5.1 The agreement shall be deemed to be completed on the approval by the Center of the last deliverable required or last payment by the Center, whichever shall be the latter.

5.2 Subject and without prejudice to the provisions in Part D of this annex, the participating institutions shall be deemed to have discharged their obligations in respect of the performance of the work after the approval of all the reports and any other deliverables required by the agreement.

Part B - Payments

Article 6 - Payments by the Center

Payments of allowable costs shall be made in accordance with the following principles:

6.1 Within Ukraine, all cash payments will be made in the national currency of Ukraine. Conversion of US dollars or Euro to the national currency of Ukraine will be according to the Interbank Rate of Ukraine exchange rate.

6.2 The financial contribution by the Center shall be paid in installments as specified in Article 5 of the agreement.

6.3 If the Center considers that the work has not effectively been commenced within three months of the payment of the first advance, the Center may require the reimbursement of the advance, together with any interest earned on the advance.

6.4 If on completion, cessation, or termination of the work, the payments made by the Center exceed the actual allowable costs, the participating institutions shall promptly reimburse the difference to the Center. Interest may be added to this amount at the prevailing market rate as determined by the Center one month after the reimbursement date specified by the Center.

Part C - Allowable costs

Article 7 - Accounting principles, allowable costs, and transfer of costs

7.1 Costs shall include actual costs incurred for the project after the operative commencement date which are necessary for the performance of the project. Allowable costs may include only the cost categories defined in Articles 8 and 9 of this annex.

7.2 The participating institutions shall ensure that no unnecessary cost or unnecessarily high or extravagant cost is charged to the agreement.

Article 8 - Direct costs

8.1 Personnel

8.1.1 Personnel costs shall be separated into two categories as described in Annex I. Even though some or all of these costs may be reimbursed by the Center through direct grant payments to individual participants, the project manager or participating institution manager is responsible for certifying the times devoted to the project by the individual participants within their respective institutes, as reflected in project time cards prepared by individual participants.

8.1.2 Personnel costs charged to the project shall be in increments of one hour.

8.1.3 Personnel costs for a specific period of time may not be charged to this project if pay (except regular employment salary from the Institute/Recipient) is being received from other sources for the same period of time.

8.1.4 The Center will not pay personnel costs associated with holidays, vacations, overtime, or sick leave. Such additional costs, if any, are the responsibility of the participating institutions.

8.1.5 The project manager or participating institution manager shall ensure that the scheduling of annual leave by the individual participants does not interfere with accomplishment of the work plan in Annex I.

8.1.6 The participating institutions are responsible for any medical expenses or compensation claims for injuries or other losses for personnel working on the project which are directly or indirectly related to the project.

8.1.7 Individual participants must record the hours worked on STCU projects on time cards according to the following procedures:

Project Manager and Participating Institution Manager Responsibilities

Project managers and Participating Institution Managers are required to do the following:

- i. Provide project participants with a separate time card for each STCU project that they will work on. Each time card must contain a project number.

- ii. Ensure that project participants understand which time card must be used to record hours worked on each project.
- iii. Ensure that all project participants correctly record the hours worked on STCU projects according to the procedure described in the project participant responsibilities section below.
- iv. Transmit completed time cards to the STCU no later than the 10th of each month.
- v. Control blank time cards provided by the STCU.
- vi. Certify that the hours recorded on the time cards are true and accurate by signing them.
- vii. Obtain signatures of two other project participants on their own (project managers' and participating institution managers') time cards in addition to their own signature.

Project Participant Responsibilities

Project participants are required to do the following:

- i. Complete a separate time card for each STCU project that they work on. Time cards are for a period of one month.
- ii. Personally complete their time cards **each working day** and **in ink**.
- iii. Correct time cards by crossing out mistakes and inserting the correct information on the next line; no erasures may be made to time cards. Project workers must initial the corrections.
- iv. Sign their own time cards at the end of each month.
- v. Record actual hours worked on their own timecard.
- vi. Certify, on an as needed basis, that the hours recorded on the time cards of the project manager or participating institution manager are true and accurate by signing their cards.

8.1.8 Payments to individual participants will be based on properly completed time cards as described in Section 8.1.7 above.

8.1.9 The Center will provide blank time cards for use on this project. Such time cards will be printed on card stock and will be serially numbered. Only time cards provided by the STCU may be used to record hours worked on STCU projects; photocopied time cards are not acceptable.

8.1.10 Project participation is limited as described in the STCU Standard Operating Procedure XXIV – Project Participation in STCU Projects: A copy of the this procedure may be obtained on the STCU's website at the following address:

<http://www.stcu.int/documents/internal/sop/sop07.php>

8.2 Equipment

8.2.1 The cost of equipment used in the project, which is purchased, fabricated, or leased, may be charged to the project as a direct cost. The total lease costs may not exceed the purchase price of the equipment.

8.2.2. Equipment purchased for the project should be identified as described in the STCU Standard Operating Procedure XXIII - Identification of Equipment Purchased for Stcu Projects. A copy of the this procedure may be obtained on the STCU's website at the following address:
[http://www.stcu.int/documents/reports/financial/Forms_Common_For_All_Countries/SOP_XXIII_Identification_of_STCU_Equipment_at_Project_Site_\(Russian\).pdf](http://www.stcu.int/documents/reports/financial/Forms_Common_For_All_Countries/SOP_XXIII_Identification_of_STCU_Equipment_at_Project_Site_(Russian).pdf).

8.3 Materials

8.3.1 The costs of materials required for the project shall be allowable costs.

8.4 Services and Other direct costs

8.4.1 Costs associated with (1) testing facilities, (2) computer services, (3) communication, (4) security services, (5) repairing/maintenance of equipment, (6) laboratory tests outside, (7) publications, and (8) patenting, but excluding items covered by Article 11 of Annex II, may be charged as direct costs to the project through cost allocation formulas approved by the Center, provided such facilities and services contribute to the project and are accessible for monitoring and auditing in accordance with Article 9 of this agreement.

8.5 Travel and per diem

The following travel costs may be charged to the project:

- i. Airline Tickets. Reimbursement is limited to the cost of coach or economy class airfare by the most direct, cost-effective routing.
- ii. Train Tickets. Reimbursement for first class rail fare is authorized.
- iii. Lodging.
 - A. Within Country of Residence, reimbursement is limited to the lower of the actual cost or \$100.00 (taxes not included) per day.
 - B. Outside Country of Residence, reimbursement is limited to the lower of the actual cost or the maximum amount allowed in the U.S. Joint Travel Regulations (taxes not included). If lodging is pre-arranged for the traveler because of conference participation funded by the STCU, then the maximum amount allowed in the U.S. Joint Travel Regulations may be exceeded by up to 25% (taxes not included). In those exceptional cases where there are no accommodations available within the maximum amount allowed or accommodations are unacceptable, then the most cost-effective accommodation is authorized with prior approval of the responsible Deputy Executive Director. Maximum lodging rates outside of a country of residence may be obtained from the STCU treasurer or at <http://www.state.gov/m/a/als/prdm/xxxx>¹
 - C. Lodging without receipt is not compensated.
- iv. Meals and Incidental Expenses (M&IE).
 1. Within Country of Residence, the M&IE is \$35.00 per day.
 2. Outside Country of Residence, the M&IE is \$50.00 per day.

¹ Where "xxxx" is the year the travel will begin. For example: 2004.

- v. Other Costs. Actual cost of passports, visa, or conference registration is authorized with receipt. Withdrawal fees accepted by the STCU.
- vi. Use of Privately Owned Vehicle. Reimbursement for the use of a privately owned vehicle to perform travel is authorized at the rate of \$.15 per kilometer. Records must be kept for this activity, including destination and kilometers traveled, and odometer readings. Documents must be signed and approved by project manager.
- vii. Local Travel. Reimbursement for the actual cost of local travel (taxi, bus, etc.) is authorized. Receipts must be obtained.

8.5.1 Additional Travel and per diem information is contained in STCU Standard Operating Procedure V – Project Participants Travel. A copy of the this procedure may be obtained on the STCU’s website at the following address:

<http://www.stcu.int/documents/internal/sop/sop05.php>.

Article 9 - Overhead

9.1 A fixed amount may be charged for project overhead to cover the cost of such items as general administration, institutional management, depreciation of buildings and equipment, maintenance, utilities, staff training or any other cost at discretion of the institute management.

9.2 The total fixed amount may not exceed 10 percent of total direct costs, exclusive of the cost of items provided in-kind by the Center.

Article 10 - Retain age

One half of the direct overhead costs will be retained by the Center until project completion.

Article 11 - Costs not allowed

Allowable costs shall not include:

- (a) Profit;
- (b) Contributions to pension, medical, or other social funds;
- (c) Provisions for possible future losses or liabilities;
- (d) Taxes, including profit tax, value added tax, personal income tax, local taxes, tariffs, dues, customs duties, import duties, or others; and
- (e) Costs allocable to another project.

Part D - Justification of costs and auditing

Article 12 - Books of account and documentation

The participating institutions shall maintain, in accordance with the accounting practices set forth in the agreement, proper books of account and appropriate documentation, such as invoices and time cards, to support and justify the costs reported. These shall be made available for audit by the Center and the financing parties during the period of the project and for a period of two years following completion, cessation, or termination of the project.

Article 13 - Auditing

13.1 Cost statements are subject to verification even after the Center has reimbursed costs. The Center and each financing party have the right, pursuant to the STCU agreement and STCU statute, to carry out on-site audits of all activities of the project. The participating institutions will be given not less than 20 days notice of any intended audit. For the purposes of the audit, the participating institutions shall make accessible all portions of facilities, equipment, documentation, information, data systems, materials, supplies, personnel, and services related to the project.

13.2 The participating institutions have the right to protect those portions of facilities that are not related to the project.

13.3 The participating institutions shall maintain all documentation and records, including those associated with equipment, data systems, materials, supplies, and services utilized on the project and shall make such documents, records, and to the extent possible, personnel available for audit for a period of two years following completion, cessation, or termination of the project.

13.4 The Center and the financing parties shall have the right to select audit organizations or individuals to carry out audits of the project. These individuals selected by the financing parties shall be entitled to the same rights, should they choose to exercise them, as the Center and each financing party in respect of access to, and verification of, any document under the agreement for the purpose of any audit.

Part E - Intellectual Property Rights

Article 14 - Definitions

14.1 Intellectual Property Rights: Rights within the meaning of Article 2 of the Convention Establishing the World Intellectual Property Organization, done at Stockholm on July 14, 1967.

14.2 Business Confidential Information: Information containing know-how, trade secrets, or technical, commercial, or financial information, which:

- (i) Has been held in confidence by its owner;
- (ii) Is not generally known or available from other sources;
- (iii) Has not been made available by its owner to others without an obligation concerning its confidentiality; and
- (iv) Is not available to the receiving party without obligations concerning confidentiality.

Article 15 - Ownership and License rights

15.1 The recipient entity(ies) (or its designee) shall hold all rights worldwide to intellectual property arising from this agreement, except for the rights in the Financing Party's territory enumerated in paragraph 15.2 below. The recipient entity(ies) (or its designee) shall provide adequate protection of such intellectual property (except as provided below). The Financing Party (or its designee) may, if requested, provide assistance to the recipient entity(ies) in managing the intellectual property. If the recipient entity (or its designee) decides not to protect the intellectual property in the territory of a Party other than the recipient entity's territory, each such Party and the Financing Party (or its designee) have the option to protect the intellectual property in that territory in conformance with the laws of the recipient entity's territory.

15.2 In the territory of the Financing Party, the Financing Party (or its designee) has the Intellectual

Property Rights arising from this agreement. In such cases, the Financing Party (or its designee) and recipient entity(ies) (or its designee) shall agree on appropriate compensation for persons named as the inventors or authors of the intellectual property. Costs of protecting intellectual property in that territory shall be borne by the Financing Party (or its designee). If the Financing Party (or its designee) does not seek protection for intellectual property in its territory within a reasonable time after such intellectual property is created and duly reported in accordance with Art. 17.2, then the recipient entity (or its designee) may seek protection in the Financing Party's territory.

15.3 Each Party and the Center shall be entitled to a non-exclusive, irrevocable, royalty-free license with right to sublicense in all countries to translate, reproduce, and publicly distribute scientific and technical journal articles, reports, and books directly arising from this agreement. All publicly distributed copies of a copyrighted work arising from cooperation under this agreement shall indicate the names of the authors of the work unless an author explicitly declines to be named.

15.4 Upon the request of the Financing Party (or its designee), the Recipient Entity(ies) (or its designee) shall enter into negotiations for licenses in additional territories on fair and reasonable terms.

15.5 Upon the request of a Non-financing Party (or its designee), a non-exclusive license for commercial purposes, with the right to sub-license, shall be granted in that Non-financing Party's territory, on fair and reasonable terms to be mutually agreed, taking into account that Non-financing Party's contribution to the establishment and operation of the Center; in this case, the Financing Party (or its designee) shall be entitled to a license on the same terms in that Non-financing Party's territory.

15.6 A non-exclusive, irrevocable, royalty-free license for non-commercial purposes, with the right to sublicense, shall be granted to the Center and to each Party (or its designee) for the territory of each Party in which the intellectual property is protected. Upon request, the Parties will exchange information on licenses and sub-licenses granted under this paragraph.

15.7 Persons named as inventors and authors shall receive and share among themselves reasonable compensation but not less than 15% of any royalties earned from licensing intellectual property by any entity obtaining rights to such intellectual property under this agreement.

15.8 The recipient entity(ies) shall grant on fair and reasonable conditions to any other entity receiving the right to exploit intellectual property arising from this agreement the rights to intellectual property and information arising outside this agreement and owned by the recipient entity(ies) necessary for such exploitation, provided that the recipient entity is free to grant rights to such intellectual property or information and that no major legitimate business interests of the recipient entity(ies) prevent the granting of such rights.

Article 16 - Promotion of technology and information on results

Confidentiality

16.1 All reports or portions of reports properly marked as invention information or Business Confidential Information shall be protected from public dissemination unless otherwise agreed by the signatory parties.

16.2 Subject and without prejudice to any rights and obligations under this agreement and in accordance with applicable laws and regulations, each signatory party agrees to keep confidential any invention information or Business Confidential Information communicated to it by the other signatory party or third parties in relation to the execution of this agreement, unless invention information so disclosed is or becomes legitimately available to the receiving signatory party through other sources without any obligation concerning confidentiality.

Information and technology promotion

16.3 The Center and participating institutions shall take appropriate steps to publicize new developments so that third parties may become aware of opportunities to license technology developed with Center support. The final report, publishable under Article 4.1(d) of this annex, shall include adequate information on the results arising from the project, their availability and other aspects of relevance for potential users or interested parties.

16.4 The Center shall be entitled to publish general information on this agreement including the identity of the recipient entity(ies), the title and objective of the agreement, its estimated costs and duration, the Center's financial contribution, and the names of managers and laboratories where the research is being carried out.

16.5 Any communication or publication concerning the project shall acknowledge the participating institutions and the cooperative support of the Center and of the Financing Parties.

Article 17 - Reporting of inventions

17.1 The recipient entity(ties) will disclose without delay to the Executive Director of the Center, who will inform the STCU Parties and any other participating institutions in a Center-approved form, every invention made or conceived under this agreement within two (2) months of the date on which such invention is made or conceived. These disclosures must be in sufficiently complete detail to convey a clear understanding, to the extent known at the time of disclosure, of the nature, purpose and operation of the invention.

17.2 The recipient entity(ies) will notify the Executive Director of the Center, who will inform the STCU Parties, of each territory in which the recipient entity(ies) decides to protect inventions through patenting within six (6) months of the reporting of such inventions in accordance with Article 17.1 above.

17.3 The recipient entity(ies) will file patent applications in each territory in which it decides in accordance with Article 17.2 above to protect each invention through patenting. The first patent application will be filed in the territory where the invention was made within twelve (12) months of reporting the invention in accordance with Article 17.1 above. The remaining patent applications will be filed in the other territories within respective time periods to ensure that the priority date of the first patent application is obtained for these later filed applications. The recipient entity(ies) will provide the Center with copies of all patent applications which recipient entity(ies) files.

17.4 If the recipient entity(ies) subsequently determines not to file a patent application in any territory of a STCU Party in which it has previously decided in accordance with Article 17.2 above to protect an invention, then said STCU Party may obtain title to that invention and file a patent application in that territory. The determination not to file shall be transmitted to such STCU Party no later than two (2) months prior to the end of the time periods for filing patent applications set forth in Article 17.3 above.

Article 18 - Notification of limitations, restrictions and obligations

18.1 The participating institutions shall use reasonable care and diligence in determining whether information or patents are, or may become, subject to the limitation, obligations, or restrictions of this article.

18.2 The participating institutions shall notify the Center prior to the signature of, and promptly during this agreement of:

(a) Any obligation to grant rights for the intellectual property arising under this agreement to a third party, which may affect the exploitation or commercialization of the results of this agreement; and

(b) Any restriction arising from contractual obligations or government or similar regulations which may materially and adversely affect rights necessary for the performance of the work or the exploitation or commercialization of the results of this agreement.

Article 19 - Duration and implementation of Part E

19.1 The rights and obligations of the recipient entity(ties) resulting from this part of this annex shall apply:

(i) For the duration of the Intellectual Property Rights in respect of Articles 15.1, 15.2, 15.6, 15.7 and 15.8; and

(ii) For a period of 10 years after the expiration, or termination, of this agreement in respect of the remaining obligations.

19.2 The cessation of the rights and obligations under this article shall not affect the continuance of any access rights where they were duly requested prior to such cessation.

Annex III Formats for Progress and Technical reports

Format for Progress reports

Quarterly reports shall specify the progress, any actual or proposed deviations and modifications to the technical plan in Annex I. The reports shall contain sufficient information to enable assessment of the progress and cooperation within the project. A suggested format for quarterly reports is as follows:

1. Project title and number
2. Date
3. Name of project manager
4. Name of institution
5. Summary of progress by task in the technical plan (Section 9 of Annex I), being executed in current quarter
6. Current status (on schedule, behind schedule, ahead of schedule). Specifically list actual milestones accomplished
7. Summary of personnel commitments
8. Information about major equipment and materials acquired, other direct costs, related to the project
9. Description of significant travel
10. Delays, problems, suggestions

The quarterly report should be between three and five pages

Format for Cost reports

Participating institutions shall prepare quarterly Cost reports. The recipient shall aggregate the reports from all participating institutions and prepare a consolidated report. Format for Cost reports will be provided by the Center.

Format for Technical reports

Technical reports shall be provided to the Center should contain the following information:

1. Project title and number
2. Date
3. Name of project manager
4. Name of institution
5. Title and Abstract of milestone accomplished. Detailed description of significant results, illustrated with graphs, diagrams drawings, photo, etc. Specifically pointed the correspondence or difference (in the last case explain the reason) of actual versus planned results, what this means for the project as a whole

The technical report should be between five and ten pages.

- Format for annual reports will be given individually