

TWENTY FIRST MEETING  
of the STCU  
GOVERNING BOARD



## STCU IN 2005 AND BEYOND

*A Changing Strategic Environment?*

A Discussion Paper for the STCU Governing Parties


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## STCU Strategic Environment Undergoing Change

The STCU has seen the emergence of two significant trends that will have implications for its future operations and organizational structure. First is the decline in the level of STCU Regular Project activity (both proposals received and projects approved for funding) and the subsequent rise in “programmatic” activities that target projects and activities toward specific research objectives or directions, as defined by the sponsors of the activities (Financing Party, Beneficiary Party, or governmental and non-governmental Partners). Second is the gradually improving civil and economic situation in some of the STCU Beneficiary Parties, which not only impacts the STCU’s nonproliferation mission but also offers opportunities for the Beneficiary Parties to take a more substantial role in STCU activities. If one assumes that these two trends will continue in the future, and given that the strategic timeframe of the STCU reorganization was limited to 2010, the STCU will need to review its current strategic direction with an eye towards its status after 2010. Will there be an STCU after 2010, and if so, what kind of organization should it be?

### History: The Two Previous Phases of the STCU

*First Phase of Operations.* Graph 1 below depicts one simple way (but perhaps not the only way) of viewing the evolution of the Science Centers, divided into three phases. When the STCU began operations in 1995, its primary strategy was to engage former weapon scientists in peaceful research projects that would give them incentives not to spread their weapons knowledge to others. The primary response tool for this engagement strategy was the Regular Projects financed by the Financing Parties (the governments of Canada, Sweden and then the European Union, and the United States). The STCU Partners Program, established in 1997, was another response tool for this same engagement strategy, and has been a growing portion of the overall STCU project funding ever since its inception. Other tools such as a travel support grants, conference sponsorship, patent assistance, training programs, etc. were also developed to provide other incentives to former weapon scientists.

<b><u>Science Centers Strategic History</u></b>				
	1992 - 2004	2005 - 2010	2010 - ?	
<b>Threats</b>	Spread of FSU WMD Expertise	Dependency on Science Centers	Ad Hoc, Politically-Sensitive S&T Problems? NIS S&T Competitive Erosion?	
<b>Goals</b>	Stabilize FWS Situation in situ	Redirect FWS into Self-Supporting Peaceful, Employment	Develop Avenues for National or Multilateral S&T Development in NIS? Multilateral Response Mechanism for Politically Sensitive Regional/Global Threats?	
<b>Strategy</b>	Engage FWS in Coop. Research Grants	Develop Engage FWS in Self-Sustainability/ Integrate FWS into National or Regional Socio-Economic Development Efforts	Nationally/Regionally Supported And Flexible, Multilateral S&T Tools to Respond to Different S&T Needs or Sensitive Tasks?	
<b>Response</b>	ISTC/STCU Regular Projects plus Supporting Activities (Travel Support, Training, Workshops, etc.)	ISTC/STCU Programmatic Activities plus Partner Programs and “Evolution to Partnership” With Recipient Member Countries	Broaden ISTC/STCU Mandate Beyond WMD Nonpro Mission? Move Beyond One-Way Assistance from non-NIS Parties and into Cooperative, Equal Partnership of All Parties?	

Graph 1

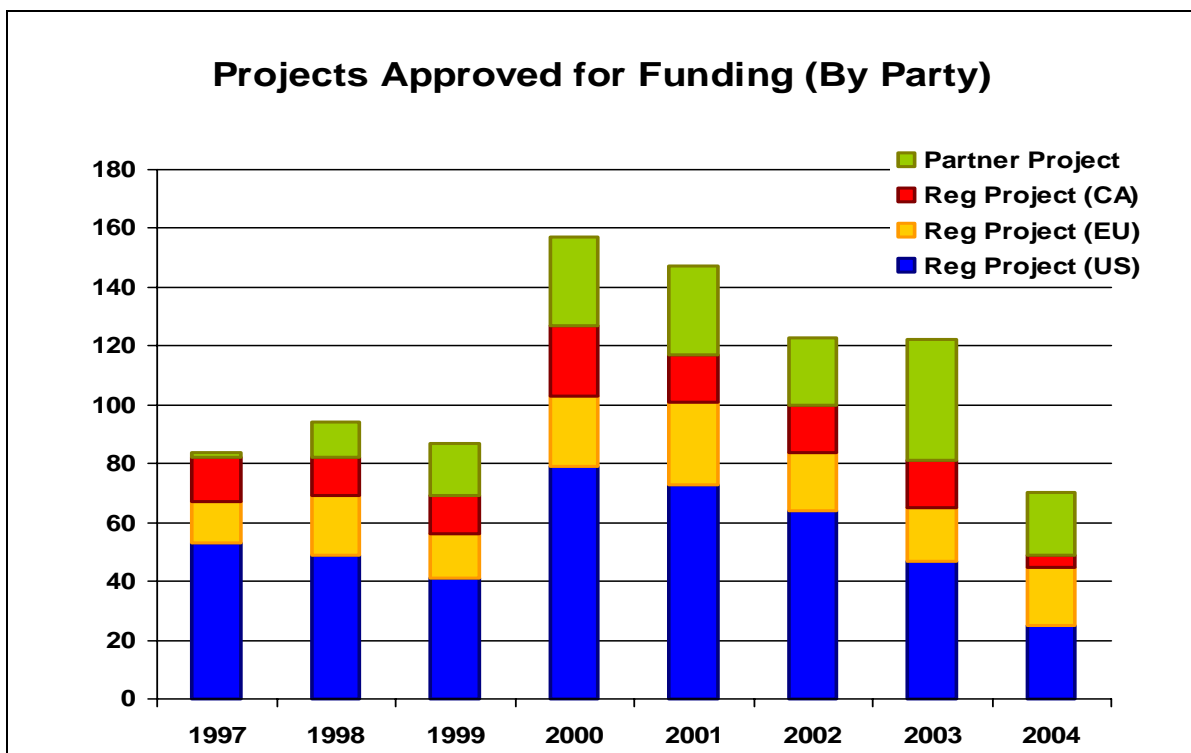
Even so, from 1995 to 2004, managing Regular Projects was the dominate STCU activity, and the level of Regular Project activity grew steadily (and sometimes at an accelerated rate). Thus, Regular Project activity was the primary driving factor in STCU administrative planning for ten years. The STCU administrative procedures, programs, and staff structure, were centered on the supporting, managing, and supplementing the Regular Project activity. Even with the emergence of Partner Project funding and Supplemental Budget programs, the STCU administrative operations continued to be dominated by the demands of the Regular Project activity.

*Second Phase of Operations.* Beginning in 2002, the Governing Parties of both the STCU and ISTC initiated a re-evaluation of the two science centers, based on perception that after 10 years of operations, the situation with cooperative threat reduction in the former Soviet Union had evolved. For the STCU, this review resulted in the 2004 Governing Board approval of the Secretariat's reorganization and shift in primary strategic focus from engagement to permanent redirection: the transition of former weapon scientists into long-term, self-sustaining, civilian careers that contribute to the development of market economies and peaceful R&D capacity within the Beneficiary Parties. Within this reorganization, the STCU Governing Parties stated that continued Party political support (political and financial) for the STCU and its nonproliferation mission was expected to remain generally steady until at least 2010.

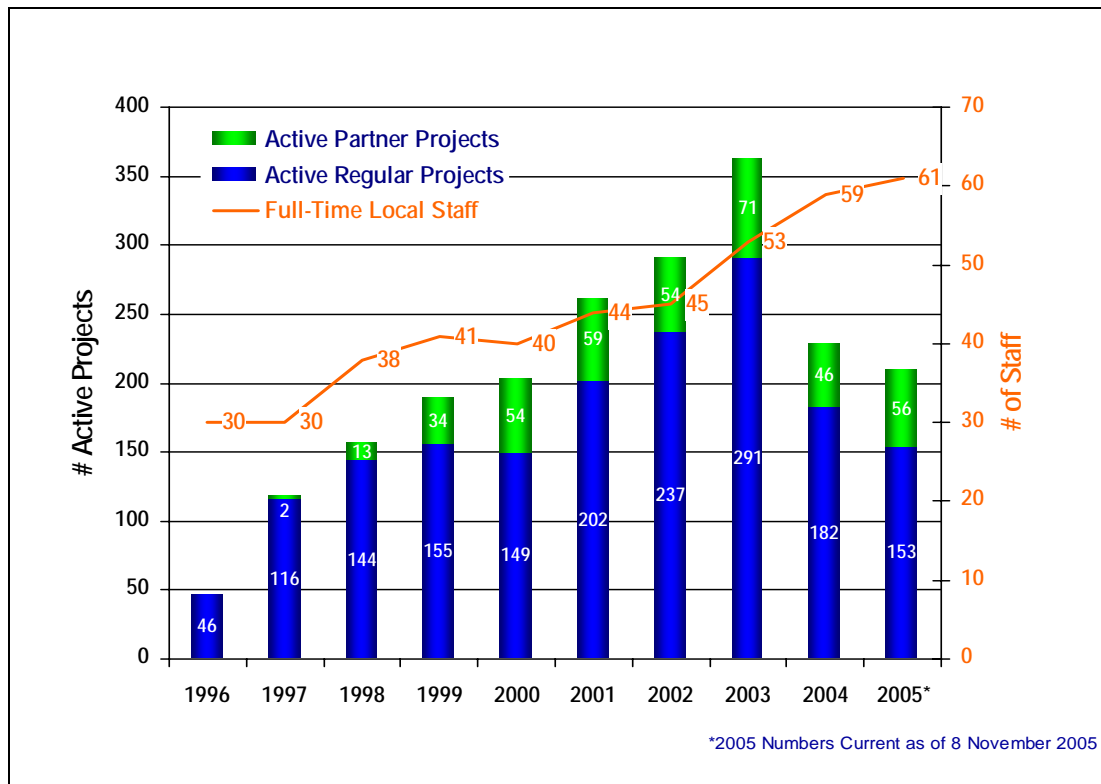
### Situation Changing Faster Than Predicated?

Since the implementation of the STCU reorganization, several trends have emerged which could have material impact on the current structure of the STCU, in terms of programs, procedures, and staff assignments and responsibilities. These trends are attributable directly to the relative reduction in Financing Party funding for projects since 2000.

- Since its peak in 2000, the STCU has witnesses a steady reduction in the number of projects being approved and funded each year. This is primarily due to the reduction in the number of Regular Projects being funded (namely, U.S.-funded Regular Projects) after 2000 (Graph 3). This reduction in approved/funded projects has led to a reduction in the number of active projects being managed by the STCU staff beginning in 2004 (Graph 4).



Graph 2



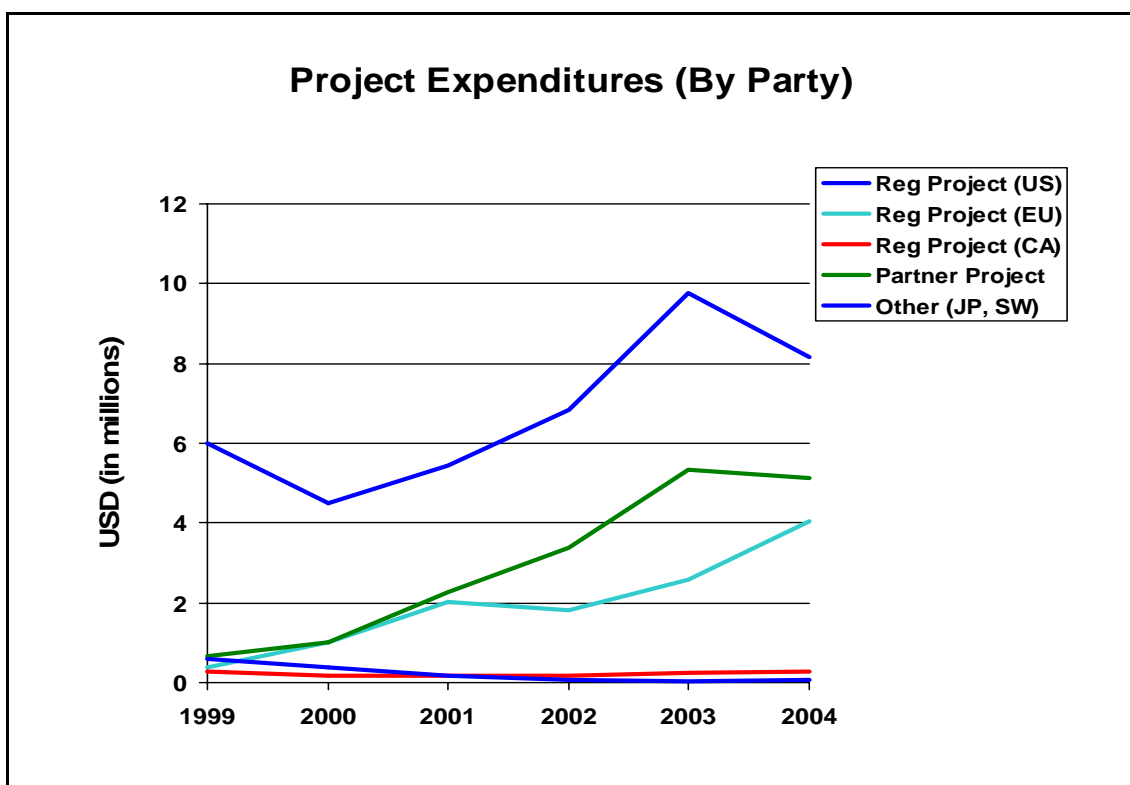
Graph 3

- As of 2004, for the first time in its history, the STCU has experienced near-zero growth in its annual Project expenditures. The STCU Annual Financial Statement for 2004 shows that between 2004 and 2003, the STCU saw a slight reduction (1.5%) in project expenditures, compared to the strong expansions in project expenditures since 2000 (46% increase between 2003 and 2002, a 22% increase between 2002 and 2001, and a 42% increase between 2001 and 2000).
- During several official meetings, the U.S. Party has warned that, given current fiscal budget constraints and other national security priorities, U.S. project funding for Regular Projects would be difficult to maintain at its previous levels. Typically, the U.S. Party funding has represented nearly 70% of the new STCU Regular Project funding each year. In 2003, the U.S. Party committed over \$9.138 million USD to new STCU projects; in 2004, the U.S. Party commitment to new projects was \$7.661 million USD—a 16.2% reduction.

These indications point to a much lower level of STCU Regular Project activity in the next few years, with a consequent shrinking proportion of STCU administrative burden. But there are other changes in the STCU strategic environment to be considered:

- By 2010, the STCU will have been operating for 15 years and one assumption could be that much of its nonproliferation objectives will have been accomplished by then. This assumption is based on some information suggesting that the STCU is successfully meeting its original nonproliferation objectives:
  - o According to informal estimates made in 1995, there were approximately 20,000-23,000 former weapon scientists (FWS) in the STCU Beneficiary countries. From 1995 to the end of 2004, the STCU has engaged 8,150 FWS in project work, or about 40% of the 1995 estimate (if that estimate was valid). In some Beneficiary Parties, such as Ukraine, the STCU engagement of FWS is higher than in new member states such as Azerbaijan or Uzbekistan.
  - o To STCU's knowledge, no new groups of FWS have been discovered for several years and the STCU has engaged all of the known significant FWS groups and research institutes in the STCU membership.

- Given the march of time and the average age of FWS in the former Soviet regions, it is quite likely that the current number of senior WMD scientists engaged in STCU activities now represent the absolute majority of such scientists that can be reached.
- STCU Beneficiary Parties are generally recovering from the post-1992 crises, although economic recovery has been generally more widespread than political or civil reform. Yet in specific cases (particularly Ukraine and Georgia), STCU Beneficiary Party governments are progressing on political, economic, and civil societal reform programs. This means that, in these specific cases, the domestic environment for absorbing underemployed former weapons scientists and technicians is improving—a key criteria for judging the continued relevance of the STCU nonproliferation mission.
- Focused programs that develop specifically targeted projects, such as the Partner Program, the Y2K program, the NASA-NASU joint projects, and Targeted R&D Initiatives, are assuming a larger percentage of the STCU project activity, and hence a larger proportion of STCU administrative work. Graph 4 shows that Partner Project expenditures have been growing at a much faster pace than general Regular Project expenditures. In spite of the slight reduction in Partner Project expenditures between 2003 and 2004, the proportion of Partner to Regular Project expenditures is projected to remain the same, or even increase slightly, in 2005. By 15 August 2005, the STCU already has over \$4.4 million in new STCU Partner Projects started (and \$2.2 million in Partner Projects awaiting final approval and signature) compared to the approximately \$4.4 million in new Regular Projects approved for funding thus far in 2005.



Graph 4

- The STCU reorganization set a new strategic orientation that: (1) focused the STCU on targeting activities towards building the capacity of high-priority former weapon scientists to achieve complete redirection and self-sustainability, (2) improved the effectiveness of the Partners Program in encouraging private-sector entities to engage the STCU's former weapon scientists and institutes, (3) encouraged development of cooperative partnerships between STCU and a variety of multilateral and bilateral S&T initiatives involving the STCU Financing and Beneficiary Parties (e.g., G8 Global Partnership, EU-Ukraine bilateral initiatives, CRDF, British

Council, NATO Science for Security), and (4) created new perspectives within the Beneficiary Parties that view the STCU as a valuable partner in addressing a broad set of objectives, encouraging these Parties to make material and financial contributions to joint activities with the STCU.

### **Is STCU Approaching Its Third Phase Faster Than Expected?**

In considering all of the above, several questions regarding the future STCU should be addressed.

*Will the STCU nonproliferation mission still be relevant in the next 5 years?*

With its reorganization, the STCU is now focused on accomplishing the second part of its mission: integrating former WMD scientists into the global S&T communities and encouraging the development of their own long-term civilian careers in ways that contribute to their country's national market economy and civil societal development. One can argue that the risk proliferating WMD expertise from STCU member countries is still relevant so long as FWS are dependent on the STCU or on inadequate single-sources of income.

- According to the STCU survey of institutes in 2003, 16% of the institutes reported that they are "reliant" on STCU project funding while another 34% report that they depend on their governments for more than 60% of their annual financing. The primary goal will be to reduce the number of "STCU-reliant" institutes and to work with the "government-supported" institutes to ensure that they have sufficiently diverse sources of income to complement the still-weak governmental financial support.

*What is the general outlook for STCU funding support from the Financing Parties in the next 5 years?*

The STCU appears to be entering a period of generally zero growth (or even reductions) in total Regular Project funding. However, with the emphasis now on accomplishing the "permanent redirection" portion of the STCU's nonproliferation mission, and with the potential for Beneficiary Parties to become more active partners in the STCU activities, there is the possibility that non-Regular Project activities—Supplemental Budget programs, private-sector Partner promotion, targeted initiatives jointly financed with the Beneficiary Parties, jointly sponsored activities with other multilateral/bilateral programs—will increase in priority compared to general Regular Project activities. Aside from the noted increase in Partner Project expenditures, it is also noteworthy to observe that expenditures from the Supplemental Budget activities (not related to Party service contracts or technical auditor expenses) has risen from roughly 15% of total budgetary expenditures in 2001 to 20% of such expenditures in 2004. With the creation of Targeted Initiatives and Targeted Training programs, the Supplemental Budget activities will increase its share of STCU expenditures even more in 2005. Therefore, even if the overall funding of STCU remains steady, the nature of the funding is shifting toward broad, holistic programs rather than disparate groups of individual projects.

*Are there future possibilities for new funding that would offset the decline in Regular Project activity?*

Partner funding notwithstanding, there seems to be only a small likelihood that new financial sources will join the STCU and contribute significantly to project activity. One possibility would be the addition of a new Financing Party; in recent years, the STCU has received informal requests for information or statements of interest (but no further action) from officials of Turkey, Japan, the Republic of Korea, and South Africa. Another possibility would be the approval of the Governing Parties to allow other funding programs to operate through the STCU, i.e., participants in the G8 Global Partnership initiative, various bilateral/multilateral threat reduction, arms control, or science research programs, etc. However, other than possible Global Partnership-related funding, the STCU Secretariat currently sees no real possibility of new funding sources on the horizon. Even considering these few possibilities, the experience at the ISTC (where Canada recently joined as a new Financing Party) suggests that any new STCU financing sources would not devote a large amount of money to the STCU, and those funds would likely be targeted to supporting STCU's pursuit of the "permanent redirection" objective. For example, the Canadian Global Partnership contribution through the ISTC (albeit

substantial) is targeted toward certain objectives such as accelerating biological/chemical institute redirection, or the ISTC supplemental training and commercialization programs. It is an assumption, but it appears that any possible new sources of financial support would direct their relatively small amounts toward activities that would give the financiers visible impact and support for the future attainment of STCU nonproliferation goals; this suggests a continued emphasis on the trend toward non-Regular Project programs and targeted activities.

*Are the STCU Beneficiary Parties ready to move toward a more equal partnership with the Financing members?*

A critical component of the STCU mission is the ability of the Beneficiary Parties to absorb their formerly isolated military scientists into the national economic systems. The 1998 financial crisis in Russia showed that the emerging political, economical, and civil societal systems of the former Soviet states would take longer to develop than many had hoped. But today, some of these emerging economies seem to be on a positive path of growth and development: Ukraine, Azerbaijan, Georgia, and Uzbekistan all experienced sustained economic growth since 2001, and political reforms in Ukraine and Georgia hold the promise for a more attractive business environment for foreign and domestic investment.

But all of these countries continue to lag in the effective use of their science and technology potential. None of the STCU Beneficiary Parties rate highly in terms of global competitiveness, and only a couple are managing to improve (slightly) the financial and systemic support to their science communities. Ukraine, for example, was rated 75 out of 80 national economies in terms of competitiveness by the World Bank, and high technology exports represent only 4-5% of Ukraine's GDP activity. Further, while Ukraine has managed to implement some raises in government-financed salaries to scientists, the current Ukrainian governmental funding for science stands at less than 1% of GDP, far less than the 2-3% that is seen in developed economies like the United States or European countries.

These issues are recognized in some of the STCU Beneficiary Parties, and governments like Ukraine and Georgia are taking some steps towards developing a more "knowledge-based" economy linked to the Euro-Atlantic economic spheres, with increased technology transfer and more effective implementation of the S&T talent. As the STCU beneficiary countries begin to establish governmental strategies, policies, and budgetary support for long-term economic development, there may be opportunities for former weapon scientists and institutes to play a major role in these processes. STCU already has been approached by Ukrainian and Georgian governmental officials who are keen to have the STCU play a partnership role with the Beneficiary Parties in those Parties' S&T reform initiatives, and are willing to assist the STCU in developing cooperative initiatives (including joint financing) to integrate former weapon scientists and institutes into these governmental reform activities.

### **Near-Term Outlook (2006-2010)**

All of this leads us to surmise that the STCU strategic environment is changing gradually, but perhaps sooner than originally envisioned in 2002. This strategic change certainly will impact the STCU's near-term administrative and budgetary planning. But it also suggests that the strategic framework for STCU's "third phase" should begin to be outlined so that the STCU is not left in a planning gap as it approaches this next phase of its existence. For the near-term (2006-2010), shifting administrative emphasis from managing of hundreds of individual Regular Projects to managing fewer, but broader programmatic activities will mean not only possible redefinition of STCU programs, but also changes in STCU administrative patterns. And these changes will need to be considered, planned, and implemented faster than originally thought because of the pace of change in STCU's strategic environment. Some the near-term considerations and changes include the following:

- Re-evaluation of the STCU administrative staff structure, which is currently geared to support approximately 400 active projects (Regular and Partner) that span the spectrum of S&T research areas.

- The STCU staff will need to be less like “project monitors” (because of fewer projects to monitor) and more “program managers” because of the emphasis on holistic, programmatic approaches to building FWS self-sustainability. The STCU staff profile will require more expertise in evaluating the capabilities and needs of recipient scientists/institutes so as to match them to where their talents are needed within Beneficiary Parties and with external interests (commercial and non-commercial).
- Broader programmatic activities, targeted project proposal development (e.g., Targeted R&D Initiatives), and Partner Projects—all of which focus or contribute to building successful FWS self-sustaining capacity for FWS—will take precedence over general, unsolicited Regular Projects in terms of STCU strategic planning and budgeting.
- Institutes and scientists will be selected and prioritized in favor of those in the greatest need of assistance in moving toward self-sustainability. Those that are already successful may no longer receive their past levels of financial support from the STCU, so that limited resources can be directed at those entities that are not yet able to sustain themselves. And some institutes may be deemed too far behind in self-sustainability development for the STCU to assist with its expected resources. STCU will need to establish a different type of working relationship with the “successful” institutes, and will need to work with the Parties on what general relationship the STCU should have with the “beyond our help” institutes that require more time and effort than the STCU can afford.
- Alternative (and appropriate) schemes for financing Board-approved STCU activities might need to be developed, such as expanding the Partners Program to include private-sector entities from within the Beneficiary Party, co-financing or “phased financing” of projects with potential Partner entities, etc.
- Developing additional, equal partnerships with Beneficiary Party governmental agencies, leading to joint financing of mutually-beneficial activities, will be necessary to leverage Financing Party funds and increase the value of the STCU to the Beneficiary Party governments.
  - Opportunities exist to combine the STCU nonproliferation objectives with Beneficiary Party S&T reform and social-economic development objectives, allowing STCU to leverage Beneficiary Party funding in these areas while simultaneously influencing the Beneficiary Party to include specific former weapon scientists in its national development activities, directly contributing to the STCU FWS redirection objective.

### **Far Term Outlook (post-2010)**

Looking beyond 2010 should now become an active, not theoretical, consideration, as there already exists a catalyst to start these discussions: the accelerated pace of change in the STCU’s strategic environment pointed out in this paper. While the future paths for the STCU must be defined by the Parties, one can suppose at least these possible directions:

1. Disestablish the STCU, once Parties agree that its nonproliferation mission is complete.
2. Transition the STCU into an S&T grants foundation under the care of one or more of the Beneficiary Parties, with the possible involvement of other Parties.
3. Continue STCU as a multilateral, intergovernmental mechanism for cooperative partnership, expanding its mission beyond nonproliferation and into multilateral S&T cooperation on specific (sometimes politically sensitive) issues, or as a valuable tool for technology innovation or research initiative organizer that serves the S&T interests of the Parties.



The long-term future status of the STCU depends completely on the agreement of the STCU Parties, particularly the Governing/Signatory Parties to the STCU Establishing Agreement. Adequate time is needed for the Parties to discuss, negotiate, and come to mutual agreement on any changes to an international agreement. But the recent changes in the financial support to STCU activities have occurred even while the STCU reorganization was just being implemented, an indication of how fast the STCU strategic environment may be changing. Every change in STCU's strategic outlook has subsequent impact on the STCU as an organization, therefore the STCU executive management and Governing Parties must attempt to stay ahead of these changes in order to ensure adequate time to make the necessary plans and adjustments to the STCU administrative and operational structures.