



Project Report



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Instrument: SUPPORT ACTION	Thematic Priority International collaboration
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Title Updated Express Diagnostics of potential for ICT R&D collaboration with the EU - Turkmenistan

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PU	Public	X
PP	Restricted to other programme participants (including the Commission)	
RE	Restricted to a group defined by the consortium (including the Commission)	
CO	Confidential, only for members of the consortium (including the Commission)	

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1. The National ICT Sector and its Governance in Turkmenistan

1.1. The National ICT Sector

The main 'broad' of ICT sector in Turkmenistan - the network of organisations, individuals and institutions which determine and shape the generation, diffusion and use of ICT technology. ICT sector organisations divided into categories:

- Governments (national) - play a key role in setting broad policy directions
- Bridging organisation **Academy of sciences of Turkmenistan** is the state body whose primary task is to ensure the practical realization of scientific and technical policy. The Academy of sciences of Turkmenistan is responsible for the Turkmen Research Educational network association (**TURENA**). The Academy of sciences of Turkmenistan itself has reorganized on the base of former Supreme Council on Science and Technology by the Decree of the President of Turkmenistan on June 12, 2009¹
- R&D institutes, universities and related institutions that provide key R&D ICT knowledge and skills;
- Infrastructure organizations (private and public) that play a role in the ICT sector (technology transfer organizations, clusters, patent offices, financial intermediaries, training organizations and so forth).

Governments:

- Cabinet of Ministers of Turkmenistan
- Ministry of Communications of Turkmenistan (including State inspection on supervising for radio frequency sector under the Ministry of communication and Turkmen telecom TT)
- Academy of Sciences of Turkmenistan
- Ministry of Education of Turkmenistan
- National Institute of strategic planning and economy development of Turkmenistan
- Ministry of Economy and development of Turkmenistan.

TURENA – Turkmen research educational national association, established by Supreme Council of science and technology under the President of Turkmenistan (Academy of Sciences of Turkmenistan from 2009) on the base of NATO science committee Project “Virtual Silk Highway”.

Legislative grounds of the TuRENA creation:

- The decree of the President of Turkmenistan (March 3, 2003)
- Academy of sciences of Turkmenistan - educational network Association of Turkmenistan (TuRENA) on the rights of public council by the decision of the vice- **Total: 71 organizations- more than 61000 users**

There are no Institutions in Turkmenistan implementing research in the ICT sphere. They are only applying IT in the different spheres of country's' economy.

Private and public:

Only one private company operating in Turkmenistan - “Altyn Asyr”

¹ The Supreme Council for Science and Technology (SCST) under the President of Turkmenistan has been abolished with its functions assigned to the Academy of Sciences, which from now on will be fully funded from the state budget. The Higher Attestation Committee, which previously functioned under the SCST, will be supervised by the Cabinet of Ministers. President of Turkmenistan Gurbanguly Berdimuhamedov signed relevant decrees on 12 June at the retreat government meeting timed to Turkmenistan's Day of Science.

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List of the main priority directions for development of science and technology in Turkmenistan (the list is approved by Presidential Decree from 12.07. 2007 №8699)

- Geology, geophysics extraction of minerals; oil chemistry, of gas, mineral resources and fertilizers; seismology; architecture and town-planning; energy, alternative energy resources.
- Diagnostics, prophylaxis and treatment of illness in the arid zones; pharmacology.
- Ecology, preservation of the environment and rational using of biological and water resources; biotechnologies.
- Breeding, selection and reproduction of agricultural animal and birds; seed-growing and selection of agricultural culture; protection of plants, protection of animal and birds from vermin and illness; production, reproduction and saving of the agricultural output.
- History, language, literature and manuscript heritage of Turkmenistan; legal and socio-philosophy development of democratic community.
- Economy of Turkmenistan.
- ICT and development of computer technology; automated systems; physics; mathematics.

Development of science and technology in Turkmenistan is implemented by the scientific institutions according to their plans which are prepared on the base of main priority directions.

Since 1993 the SCTS has implemented the following basis tasks in the field of R & D in Turkmenistan. Now this task will be realized by the Academy of Science of Turkmenistan.

- Providing of scientific and technical policy;
- Definition of priority directions and science, technique and technologies development prognostication;
- Introduction of achievements of native and world-wide science to industry and coordination of scientific and technical programs;
- Principal financing of fundamental and applied researches, experimental-designed and technological elaborations;
- Consolidation of material and technical base of scientific organizations;
- Forming of scientific informational system and providing of functioning of national scientific educational network;
- Expertise of contents of all curricula, text-books and other materials for educational universities;
- Expertise of new foreign technologies, imported to Turkmenistan;
- Activity coordination of Turkmen scientific institutions and organizations, not dependant from their subordination;
- Consideration of applications on awarding scientific degree of doctor of science;
- Development of international cooperation in fields of science and technologies;

Basically ICT sector in Turkmenistan is applied research linked to all economy sectors.

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President of Turkmenistan Gurbanguly Berdimuhamedov: “A distinctive feature of the scientific policy of modern Turkmenistan is that science must serve only peaceful and humanistic purposes, create abundance, ease working conditions, improve quality and increase production output”. “Science, education, culture are the priority trends in our national policy. Our task is to bring the national science up to a world level and emphasis is put on applied significance of scientific research. Along with it, new agreements and contracts in different branches of science are concluded between the research institutions of Turkmenistan and the foreign research centres, international organisation and foundations, international scientific and technological cooperation is expanded significantly.

“Turkmen scientists use the latest scientific technologies and, the internet in their activities. The opportunities provided by the internet and advanced technologies help to inform our scientists of scientific advances and innovations. Also, an access to the internet allows students to expand their knowledge.

“In the new historical epoch the progress of Turkmen science encompasses the wide application of advanced technologies and development of high-tech industries in our country. This is a stage-by-stage process and we rely on the development of scientific technologies at national level. Particular attention is paid to technology modernization of oil and gas, petrochemical, cotton ginning and textile industries, i.e. the sectors that underlie the country’s economic potential and those that are an important source of income. We spare no funds to develop science and technologies.

1.2. The ICT Governance System in the country

National Strategy for the dissemination of informative communication technology in the branch of Science and Higher Education has been worked out in accordance with the project of the Government of Turkmenistan and UN Development Program “The dissemination of informative technology” which is directed to sustainable development of people in Turkmenistan and during research activities aimed to support the effective usage of modern informative communication technologies, computer aids and automation.

Main ICT Institutions:

- **MINISTRY OF COMMUNICATIONS** – Serves as telecom, post and TV regulatory body; 9 enterprises/services
- **Ashgabat city phone network** – Develops and operates the Ashgabat city network 140,000 phone numbers; fully digital. CDMA equipment used for 20,000 numbers in Ashgabat and outskirts. In 2011 this number increased up to 24000 phone numbers; fully digital. CDMA equipment used for 56,000 numbers. NGN technology being introduced in 2009-2011. Plans in place for a massive modernization of a unified billing center
- **Center of international payments and agreements** – responsible for transit and traffic of international channels, and payments with international operators
- **Marytelecom communication enterprise**) – responsible for developing and operating domestic, intercity and international communications for Mary province. NGN technology being introduced in 2009-2010 with capacity of 50,000 numbers; other plans include a fiber optic line between Mary and Serhetabat, with potential addition of 535 km to Afghanistan
- **Turkmen State Institute Transportation and Communication** - higher education institute for telecommunication, TV and radio broadcasting and other transportation-related areas.

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Significant Communication Projects since Independence

- 708 km stretched Bajigiran-Ashgabat-Turkmenabat fiber-optic communication line was built and put into service. It is a part of Trans-Asian-European cable line that is 27 thousand km in length.
- 645 km stretched Ashgabat-Balkanabat-Turkmenbashy fiber-optic communication line was built and put into service.
- 680 km stretched Ashgabat-Dashoguz fiber-optic communication line was built and put into service.
- 420 km stretched Ashgabat-Atamurat-Magdanly fiber-optic communication line was built and put into service.

In 2010 Turkmenistan has launched 3G services in the capital city Ashgabat and in 2011 for other parts of the country. Turkmenistan planned to switch onto 4G system in 2012.

2. National ICT Policy Objectives and Trends

2.1. Objectives and Targets of National ICT Policy

Turkmenistan is a natural resource-rich country which for decades to come is expected to benefit from vast inflows of gas and oil revenues. A main development challenge is to effectively channel these earnings toward investment in key economic sectors to ensure diversification and sustainable development of the economy beyond the gas and oil era and to ensure that decent employment and personal development opportunities are created for the population at large. A high level of domestic human capital is essential to meet this challenge rather than relying on importing a qualified labour force in key economic sectors as has been the case during the last decade. A well functioning and modern education and training system covering all levels from primary school to PhD is a prerequisite for building human capital.

The great attention of the Turkmen Officials is paid to ICT sector in the country for the last period. A numbers of Decrees and regulations have been issued by the Government of Turkmenistan.

A. Resolution of the President of Turkmenistan № 11454 from 10 January 2011 it was approved the List of priority areas of science, technology and research work, which will be performed in 2011-2015. In this Resolution in areas of information and telecommunication technologies:

1. To organize and control manufacturing automation industries to modernize the economy through the introduction of information and electronic systems, as well as the creation of innovative knowledge base.
2. To develop scientific basis for the development of electronics and fiber- and photo electronics and in this field to introduce new technology to the production.
3. Innovative technologies for creating and using electronic documents and e-government.
4. Introduction to system of communication and telecommunication, latest achievements in science and technology.

B. Resolution of the President of Turkmenistan № 11037 from April 22, 2010 “On information support and circulation of documents development” In order to improve governance, to ensure its information and communication technology use and protection of information resources, increased security, and resolve:

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1. Ministry of Economy and Development together with the Ministry of Communications will create unified system for the implementation of information and communication technologies in public administration in Turkmenistan.
2. Ministry of Communications to create a unified system for the implementation of information and communication technologies will ensure the use of optical communication systems of Cabinet of Ministers of Turkmenistan and industry organizations.
3. Financing of the works under 2 government organizations have been at the expense of the budget on a DHW calculation at their own expense.
4. For 2010 to approve the plan to introduce information and communication technologies in public administration in Turkmenistan. (Attached)
5. For execution plan for the introduction of information and communication technologies in public administration of Turkmenistan in 2010 to create and approve the working committee. (Attached)
6. Ministry of Communications of Turkmenistan will ensure conditions for a productive working group on introduction of information and communication technologies in public administration in Turkmenistan.
7. Ministry of Economy and Development, Ministry of Communications and the Ministry of Justice of Turkmenistan during a month will prepare and submit to the Cabinet of Ministers of Turkmenistan connection with the order changes and the application to amend the legislation of Turkmenistan.

C. Resolution of the President of Turkmenistan № 11309 from 08.10.2010 “On creating and implementing electronic document management systems in health care organizations in Ashgabat city. Also the Resolution of the President of Turkmenistan 20.11.2010 № 11359 “On tasks to create and implement electronic document management systems in health care organizations in Ashgabat city in order to create electronic document management system in health and medical industry of the country through widespread adoption of information and communication technologies, as well as to further improve reception office branch in the Renaissance and the New transformations.

3. R&D ICT Co-operation with the EU

3.1. Co-operation involving private industry

Only one foreign Private communication company in Turkmenistan was presented – “Mobile telesystems” (Russian mobile operator (from 2009 offers internet service). Starting from December 2010 this company is longer available.

Self-sustained Company named “Altyn Asyr” operating in Turkmenistan. This company assigns mobile network service. Altyn Asyr is the largest mobile operator in Turkmenistan with over 1.000.000 subscribers as of 2011.

Scientific-Consulting Center "Altyn Umyt" has been created in 2010 and functioning as partner of Academy of sciences and over institutions of Turkmenistan. The main activities of the center aimed to expand international cooperation within the frameworks of FP7. Organization informs and carries out activities such as seminars, conferences, workshops, information days and etc. The main goal is to help scientists of Turkmenistan to be involved in the processes and innovations of modern science

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Main opportunities for ICT co-operation and policy responses.

The main opportunity for ICT co-operation is possible cooperation with the Governmental organisations such as Ministry communication (Turkmen telecom), Academy of Sciences of Turkmenistan.

Turkmenistan has only one (Turkmen telecom) provider of internet communication and this permanent organisation (on behalf of Ministry of Communication) is responsible for ICT policy in Turkmenistan.

The second provider is the Academy of Sciences of Turkmenistan which has its' own network created on the base of Presidential Decree, directed to Science-educational community of Turkmenistan.

Description of opportunity	Measures addressing the opportunity (if any)
1. ICT Security of the Science-educational network	Organisation of laboratory against cyber attack Trainings of the specialists
2. Increasing qualification of the science-educational staff of Turkmenistan	Permanent trainings
3. Opening ICT academies (like Cisco academy)	Education outside country Dissemination inside Turkmenistan
4. Trainings and workshops	Wide ICT training for users from government

3.2. Co-operation involving universities and public research organisations

The Turkmen government provides significant support of the initiatives of sector development of information communication technologies in Turkmenistan. This support expressed in two directions: in direct support of the sector by means of application of information technologies in the different programs and projects,

The development of information communication technologies in Turkmenistan is very important in further rendering by the international organizations and countries - donors' support and allocation of this direction in one of the priority programs in donors' financing, which can accept active participation in National strategy realization.

The qualitative performance of management functions in state information resources is impossible without the appropriate technological maintenance. In this connection it is necessary to achieve significant progress in the field of development and introduction of the unified technologies usage of telecommunication networks for management coordination of state information resources. Besides it is necessary to lead works on standardization of the forms of representation of state information resources in telecommunication networks, telecommunication technologies usage for state information resources management will allow an increasing number of bodies of the state authority which is carrying out active information interaction among them to create advanced user interfaces of access to information resources.

To organize an effective utilization of information resources for the state management sphere. At protective organizations of state information resources it is necessary on all levels of management to mean a complete complex organizational, program - technological, economic and other measures ensuring a high-grade in every respect operation of information resources. The development of

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organizational methods of the control of a condition and safety of state information resources should be directed on an establishment of transparent system of the responsibility and powers on concrete questions of safety, and order operation of information resources.

At all levels of state information resource management it is necessary to provide realization within the framework of a uniform scientifically technical policy(politics) of the coordinated complex of measures on maintenance of protection of state information resources, control of their condition, safety and maintenance of the modes, established according to the legislation, of access to them.

Experts of AST in cooperation with Unesco hold the International conference «Role ICT for improvement of quality of education and science (3-5 December 2009) in Turkmenbashi city, Turkmenistan.

More workshops and seminars has been planned to hold in Turkmenistan on the base of different sources.

Partner in the UNDP Project - “InfoTuk” «Information shearing in Turkmenistan for sustainable human development» Stage I.

Participation in the FP 7: S&T International Cooperation Network for Central Asian and South Caucasus Countries

Workprogramme area addressed: Capacities Workprogramme; Activities of International Cooperation; Activity 7.1; Bi-regional coordination of S&T cooperation including priority setting and definition of S&T cooperation policies;

Area: South Caucasus and Central Asia Region (FP7-INCO-2009-1.5)

Academy of sciences of Turkmenistan has participated in the Ru and the FP7-funded ISTOK-SOYUZ projects.

- **It should be noted participation of AST chief expert Prof. Ch. Amansahedov in ICT 2010 (Brussels, October 2010) EUOEECA ICT Cluster**, ICT 2010 is organized by the European Commission and hosted by the Belgian Presidency of the European Union.

- **Academy of sciences of Turkmenistan is the participant in FP7-ICT-2011-7 ICT-7-10.3 - International partnership building and support to dialogue. Project acronym “PICTURE”:** Policy dialogue in ICT to an Upper level for Reinforced EU-EECA Cooperation.

Ongoing and proposed EU Tacis Programme projects.

- TEMPUS-TACIS-CP/TME (1999/2000): “Internationale Beziehungen Technischer Universitäten EU - Turkmenistan”
- TEMPUS TACIS JEP 23020-2002/TME: “World Standard Education at TME Universities”
- TEMPUS TACIS JEP 24020-2003/TME: “Distant Training of Trainers in New Curricula in TME”
- TEMPUS TACIS JEP CD JEP 27028-2006/TME “ICT as a tool in postgraduate training and VET practices”
- 144791-TEMPUS-2008-ES-JPCR “Solar Cell Technology Courses for VET and Industry in TM”.

About 30 Tacis project implemented in Turkmenistan, a quarter of them with regards to the ICT sector.

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EC Project "CAREN» started in 2009 (short explanation at page 20) is successfully going on, agreement for extension of the project until the end of 2012 has been reached.

New application to participate in the Tempus programme has been submitted. Title: "Extension of Training for Postgraduates and Industry in Solar Energy in TM"

4. ICT Co-operation with other foreign countries

Project "Virtual Silk High Way", sponsored by NATO Science Committee

The Silk Project provides connectivity to GEANT2 from the National Research and Education Networks (NRENs) of the 8 Newly Independent States (NISs) of the Caucasus and Central Asia, and of Afghanistan. The ancient Silk Road was not only a trade route but also an all-important road for the transfer of information and knowledge between major regions of the world. The project that is presented in this web site brings highly cost effective, global Internet connectivity to the Caucasus and Central Asia through state-of-the-art satellite technology, thus creating a virtual Silk information highway. Consequently, the project has been called the 'Virtual Silk Highway', in short: the 'SILK Project'. The aim of the SILK Project is to increase significantly the exchange of information with, and between, academic and educational institutions in these regions.

EU Project IST-026546 Organising Caucasus and Central Asian Internet Offerings to NRENs "OCCASION"

The OCCASION Project manages the Silk Project, provides additional features (e.g. network management, VoIP and videoconferencing tools), and services such as information, CSIRTs and operational support. Their deployment and maintenance help researchers in the Silk countries to collaborate with their colleagues in the European Union. Another aspect of the project is to identify significant User Groups, active in both the Silk countries and the European Union, who need to use the Silk network for their collaborations. It then fosters the requisite training and joint workshops (co-funded with other bodies) to enable useful collaborations. Finally, it will assist the Silk NRENs to move towards an environment in which their networks will be self-sustainable without continued large-scale financial contributions from the EC and NATO.

NATO PROGRAMME SECURITY THROUGH SCIENCE

"Masters Level Distance Teaching in ICT in Turkmenistan Module 1 and 2, 3"

The first module will run the first year and cover fundamentals like programming and applications. These fundamentals include amongst others computer usage, basic understanding of internet technologies, programming languages, as well as advanced application usage and development environments and frameworks.

Module 3	1 year	Specialization	Inter-Object-Communication, Transaction Processing
Module 2	1 year	General principles	Software Architectures
Module 1	1 year	Fundamental courses	Programming languages, Applications

Participants in the EU Project "Central Asian Research and Education Network" (CAREN)

The Silk Road was the information super-highway of its age, serving as the conduit not only for goods but also for the transmission of knowledge and ideas between east and west. As merchants and other

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travellers traversed this ancient trading link between Asia and Europe, they also carried with them culture, art, philosophies, beliefs and ideas.



Just as the ancient trade route brought regions closer together, over 2000 years later the 'Virtual Silk Highway' (a.k.a the Silk Project) was launched to facilitate the exchange of ideas and information between academic institutions in Eurasia. Based on satellite technology and funded by NATO, over the last 10 years the Silk project has successfully established a first regional research and education network in the Southern Caucasus and Central Asia.

As a natural progression and to overcome the capacity issues associated with a satellite-based network, the Central Asian Research and Education Network (CAREN) will replace the currently operating Virtual Silk Highway, and provide universities and research centres in five Central Asian countries with a broadband internet connection: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. An EC/AIDCO supported feasibility study concluded that the Central Asian region as a whole was fit for a regional network project (CAREN) to connect the academic communities to GÉANT through fibre optic connections. CAREN will build on the achievements of the Silk project as well as the EC-funded OCCASION project which manages the former.

The NATO funding for the Silk project is generously extended to June 2009 to allow a seamless transition to the new CAREN network.



The CAREN project follows the path taken by the South Caucasian countries. Their Silk project connectivity is now replaced by terrestrial fibre optic connection to GÉANT through the Black Sea Interconnection (BSI) project.

“PICTURE”

Policy dialogue in ICT to an Upper level for Reinforced EU-EECA Cooperation

Abstract:

Following the tradition of scientific collaboration between EU and the EECA region, and built on the sound outcomes and lessons learnt of three clustering projects (ISTOK-SOYUS, SCUBE and EXTEND), a group of leading EU and EECA specialists from twelve countries (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russian federation, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan) with complementary competences have come together in the PICTURE project with the sole purpose to bring the ICT R&D policy dialogue and cooperation between EU and EECA to an upper level. The overall aim of the project is to engage the EU and EECA stakeholders from across research, academia, industries, government and civil society to enrich and support the EU-EECA ICT Policy Dialogue, and to reinforce strategic partnerships between EU and EECA ICT organizations.

To reach the objective of the project, the consortium will: -Update the EU-EECA ICT priorities for cooperation and provide an overview of the EECA ICT policy dialogue, currently existing in the region -Enrich the Policy Dialogue process and meetings between the EU and EECA, encompassing findings from policy research and stakeholder views dealing with common R&D perspectives, priorities, opportunities and challenges -Set up and animation of working groups, focusing on Computing Systems, Internet of Services and ICT Policy -Organization of 3 workshops on Computing Systems, Internet of services and ICT Policy topics, with ten working groups meetings, providing input and follow up, -Implement pilot projects that would be different in each country -Recommend future co-operation initiatives -Explore and recommend existing EECA programmes in order to open new perspectives for participation of the EU ICT teams As final outcome, the project will present recommendations and strategies for reinforcement of bilateral and multilateral cooperation, covering

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the large geographical area of the EECA countries.

Annex 1: Key ICT stakeholders in the country

N	Full name of organisation	Contact person	Position	Email	Role (function) of the organisation in the ICT sector: eg. Policy maker, infrastructure organisation, R&D institute, funding agency...
1	Ministry of Communication of Turkmenistan	Kurban Taganov	Head of department	+99312 353385	Policy maker, management
2	Turkmentelecom of the Ministry of Communication of Turkmenistan	Sapargeldi Tilevov	Vice head of Turkmentelecom	+99312 510758 sapargeldi@online.tm	Policy maker and Logistic management
3	Academy of Science of Turkmenistan	Chary Amansahevov	Scientific secretary	amansahatov@yandex.ru	Infrastructure organisation
4	«Mobile Telesystems» (Russian Federation)	Oleg Atamanov	General manager of the filial	Fax: +99312 398040 director@mts.tm	Management, Service
5	Academy of Science of Turkmenistan	Rustam Gadjiyev	Chief expert	rustamtme@yahoo.com	International cooperation, projects management
6	"Europa House" Turkmenistan	Theo Hensels	Coordinator	481886, 450785. Ehouse0708@online.tm	The organization acts as a bridge between Turkmenistan and the EU in all areas of activities and projects of the EU

International projects in Turkmenistan

In summary, the major objectives of the IncoNet EECA project are:

- To support and facilitate a bi-regional EU – EECA S&T policy dialogue involving stakeholders from policy making, science community and industry. The dialogue will address each others S&T potentials, policy goals and demands in order to define common priorities and to develop respective joint scenarios and implementation strategies in order to strengthen the S&T cooperation.
- To address other EU policies and their Instruments from which the S&T cooperation with EECA could benefit. Emphasis will be given on the European Neighbourhood Policy – ENP and the Four Common Spaces with Russia (External Relations), the Education Policy (Life Long Learning Programme) and the Innovation policy (Competitiveness and Innovation Programme – CIP). The the

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possibilities to exploit their potential and to combine instruments (7 FP, ENPI, DCECI, LLL, CIP) to address various needs of S&T policy in EECA will be assessed.

- To strengthen the participation of EECA in the 7th EU Framework Programme with emphasis on the “Cooperation” Programme but addressing other Specific Programmes as well (namely “Peoples”, “Ideas”, “Capacities –SMEs”). In parallel, concrete recommendation for future Specific International Cooperation Activities (SICA) will be presented to the European Commission and to the responsible Programme Committees. In order to raise the capacities of the EECA, particular activities will address capacity building and human potential development of the existing National Information Points / National Contact Points.

- To implement strategic analyses that will provide a knowledge base and scientific evidence for the bi-regional/bilateral dialogue. As a result, a number of analytical papers will address the development of S&T indicators, will identify leading S&T institutes in the EECA, and will investigate present and future cooperation patterns between the EU and the EECA and national approaches towards global challenges. In addition a public ‘EU-EECA S&T Web Portal’ has already been built to widely disseminate information and to raise awareness of the potential of and the framework for enhanced EU-EECA S&T cooperation. To develop joint scenarios and to plan S&T related policies and activities addressing the challenges of the globalization of research and the fulfillment of the global Millennium Goals.

- To monitor and to review ongoing EU (MS/AC) – EECA cooperation activities and to present the results to the wider scientific community.

CAREN Project

The CAREN (Central Asia Research and Education Network) project will provide high capacity Internet links for the first time to one million students and researchers in over 200 universities and research institutions along the ancient Silk Road in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan to each other and to the global research community through connection to the high-speed pan-European GÉANT network.

The network is co-funded by the European Commission, which is providing initial financial support of € 5 million until the end of 2011 and by the Central Asian countries. The project will be operated and managed by research networking organisation DANTE in conjunction with the National Research and Education Networks (NRENs) of the countries involved.

About CAREN

The CAREN project aims to establish a high-capacity regional research and education network in Central Asia. Covering one million students and researchers in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan it underpins regional and international collaboration through links to the pan-European GÉANT network. Funded by the EU and central Asian National Research and Education Networks (NRENs) the project began on 1 January 2009. It is initially scheduled to run to 2011, with the network going live in early 2010. It is run by the international research networking organization DANTE, in collaboration with the EU and local NRENs.

Tempus Project 144791-2008-ES-JPCR “Solar Cell Technology Courses for VET and Industry in TM”

- Creation of a management unit and system (SOLTIME - SOLar Cell Initiative in Turkmenistan) which would support the development of the educational platform through a masters level curricula and development of ICT-supported teaching programmes for students, postgraduate (PE) students in the area of renewable energies and solar cell technology

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- Development of the TME-specific methodology of distance teaching and content and strong control for ICT-supported teaching in cooperation with educational institutions, industry and theministries of TME to an internationally accepted standard in solar cell technology.

- Development of an education platform and implementation of practical experience in ICT-supported teaching by pilot teaching in the area of renewable energies and solar cell technology with a subsequent large-scale teaching , dissemination and networking.

- Sustainability: Creation of the base of the respective electronic courses of EU universities for ICT-supported teaching as a standard procedure in the TME Higher Educational system which becomes approved by the Government of Turkmenistan (Government of Turkmenistan, Supreme Council of Science and Technology under the President of Turkmenistan, Cabinet of Ministers) as an educational and training tool.

- Advice and support of the SCST in further networking of institutions and co-funding activities from other donors including cooperation with the currently proposed EC sustainable development policy Advice programme (PAP) project AP 2005, including future investment and possible fee paying based service and/or need for government subsidy policy.

Tempus 27028-2006 “ICT as a tool in postgraduate training and VET practice”

Creation of an educational platform for the development of the professional qualification, theoretical knowledge level and standards of students and postgraduates in TME.

Organisation of the distance learning support and monitoring in the implementation of the summer vacation industrial practice (VET) programme of 3-rd and 4-th course students.

Selection and allocation of further electronic courses of European Universities on the main subjects contained in the reformed TME curricula within the SCST server.

Creation of an ICT supported methodology for distance training of students and postgraduates, including those working in industry.

EC Project – Science, Technology, Post-Graduate Education Standards Development.

Analysis of current situation in Turkmenistan and abroad

Information system design and its materialisation

(Regulatory framework of S & T and post-graduate education

(Outlining of a sector modernisation programme for future interventions

Design of genera/ICT training and materialisation of its pilot course

Tempus Project CD JEP 24020-2003/TME “Distant training of Trainers of Turkmen Universities”

Expansion infrastructure TME Internet centers

Development common computer platform DL in TME

Elaboration of TME-specific DL-curricula in computer and software engineering, informatics, economics and business administration

Training of TME trainers in

- DL platform
- TME-specific DL curricula
- English language.

288279	PICTURE	Updated Express Diagnostics of potential for ICT R&D collaboration with the EU - Turkmenistan
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Tempus Project TT JEP 23020-2002/TME World standards education at TME Universities

Creation of a sustainable University Management organization INTME providing extensive training in INTERNET usage to five Turkmen Universities, related institutions and Ministeries on the base of the NATO Virtual Silk Highway programme, which provides cost-free high-speed INTERNET connectivity to all Central Asian countries until at least June 2005.

TEMPUS PROJECT APPLICATION

“Extension of the Use of Solar Energy in TM”

Main tasks:

- Creation of an Integrated National Platform (INP) on Renewable Energies and Solar Energy Technology,
- Creation and Design of a training program on Solar Energy Technology, compositions of teaching materials,
- Implementation of a training program on renewable and Solar Energy Technology,
- Implementation of practical experience and technology for TM universities and industry courses on environmental technology and sustainability,
- Training courses on environmental technology and sustainability.