

MINUTES

The 21st Meeting of

COMSATS Coordinating Council

3-4 April 2018

at Al-Farabi Kazakh National University (KazNU)
Almaty, Kazakhstan



Commission on Science and Technology for
Sustainable Development in the South
(COMSATS)

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INTRODUCTION

INTRODUCTION

The 21st Meeting of COMSATS Coordinating Council was held on 3-4 April 2018 in Almaty, Kazakhstan. The meeting was hosted by COMSATS' Centres of Excellence in Kazakhstan, the Al-Farabi Kazakh National University (KazNU).

The Coordinating Council is an important organ of COMSATS' Network of International S&T Centres of Excellence, which comprises the Heads of COMSATS' Centres of Excellence as members. It promotes South-South cooperation in science and technology for building and sustaining a critical mass of scientists and technologists in areas that are most relevant to the needs of developing countries for realizing the overall objective of achieving sustainable socio-economic development in the South.

The following Council members (or their representatives) participated in the meeting:

- i. **Dr. Md. Sarwar Jahan**, Chief Scientific Officer, BCSIR, Bangladesh;
- ii. **Dr. Robert Boddey**, Research Scientist, Embrapa Agrobiologia, Brazil;
- iii. **Prof. Dr. Ashraf Shaalan**, President NRC, Egypt;
- iv. **Dr. Eduardo Posada F.**, Director CIF, Colombia;
- v. **Dr. Mahmoud Molanejad**, Acting President for International Cooperation, IROST, Iran;
- vi. **Mr. Johann Antoine**, Head of the Nuclear Analytical Laboratory, ICENS, Jamaica;
- vii. **Prof. Dr. G. M. Mutanov**, Rector KazNU, Kazakhstan;
- viii. **Prof. Ejugwu Stephen Onah**, Director/Chief Executive NMC, Nigeria;
- ix. **Prof. Dr. Raheel Qamar**, Rector CUI, Pakistan;
- x. **Dr. G. A. S. Premakumara**, Director General ITI, Sri Lanka;
- xi. **Dr. Widad Hassan Abdel Halim Hassan**, Director General, IRCC, Sudan;
- xii. **Dr. Maher Suleiman**, Director HIAST, Syria;
- xiii. **Dr. Lugano Wilson Mwansule**, Senior Researcher, TIRDO, Tanzania;
- xiv. **Prof. Ahmed Ghrabi**, Director General CERTE, Tunisia;
- xv. **Dr. S. M. Junaid Zaidi**, Executive Director COMSATS.

The following Liaison Officers/officials accompanied the Council members:

- i. **Prof. Hosam El-Sayed**, Assistant Vice President for Research, NRC, Egypt;
- ii. **Prof. Tlekkabul Ramazanov**, Vice-Rector for Research and Innovative Affairs, KazNU, Kazakhstan;
- iii. **Dr. Arshad Salim Malik**, Head, International Office, CUI, Pakistan;
- iv. **Ms. Rumla Tahir**, Program Officer, CUI, Pakistan;
- v. **Mr. Waqas Afridi**, Deputy Registrar/Staff Officer to Rector, CUI, Pakistan.

Moreover, the following official participated in the meeting in order to present the case of his organization's induction in COMSATS' Network:

- i. **Prof. Jibin Sun**, Deputy Director-General, Tianjin Institute of Industrial Technology (TIB), China.

In addition, the following officials attended the meeting as Observers/representatives of Partner Organizations:

- i. **Ms. Maria Luisa Fichera**, Chief, Legal & Administration, International Centre for Genetic Engineering and Biotechnology (ICGEB), Italy;
- ii. **Dr. Atilla Karaman**, Researcher, Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC), Turkey;
- iii. **Dr. Elias Bonilla**, Chairman, Edibon International, Spain.

COMSATS Headquarters, Islamabad, was represented by the following officials:

- i. **Mr. Tajammul Hussain**, Advisor (Programmes), COMSATS Headquarters;
- ii. **Dr. Kamran Jahangir**, Advisor (TAC), COMSATS Headquarters;
- iii. **Mr. Farhan Ansari**, Sr. Assistant Director (Programmes), COMSATS Headquarters.

A complete list of participants of the meeting along with their contact details is given as [Annexure-I](#).

The Working Paper of the meeting, including the annotated provisional agenda and technical programme, was sent to all members of the Council and other invitees well in advance, in order to facilitate them in making preparations for the meeting. The hard copies of the Working Paper were also made available to all participants upon their arrival at the venue. The meeting, which was spread over two days, comprised three technical sessions, in addition to an inaugural and a closing session. The various presentations made during the meeting have been uploaded on COMSATS' website for record and necessary follow-up actions.

AGENDA OF THE MEETING

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The 21st Meeting of COMSATS Coordinating Council

3-4 April 2018

Hosted by: Al-Farabi Kazakh National University (KazNU), Almaty, Kazakhstan

Agenda Item – 1	Approval of the Provisional Agenda of the Meeting
Agenda Item – 2	Approval of the Minutes of the 20 th Meeting of COMSATS Coordinating Council
Agenda Item – 3	Implementation Status of the Decisions of the 20 th Meeting of COMSATS Coordinating Council [summary <i>by Advisor (Programmes) – COMSATS</i>]
Agenda Item – 4	Presentation of COMSATS' Annual Activity Report (May 2017-March 2018) [<i>by Executive Director – COMSATS</i>]
Agenda Item – 5	Presentation by Mr. Elias Bonilla, Chairman, Edibon International, Spain
Agenda Item – 6	A: Presentation by the Representative of Tianjin Institute of Industrial Biotechnology (TIB), China, in support of its application for the Membership to COMSATS' Network B: Consideration of the induction of TIB, China, as Network member
Agenda Item – 7	A: Presentation of the Programmes of Centres of Excellence related to South-South Cooperation, Triangular Cooperation, and future plans for COMSATS' Network: a. Bangladesh Council of Scientific & Industrial Research (BCSIR), Bangladesh; b. Embrapa Agrobiologia, Brazil; c. Centro Internacional de Fisica (CIF), Colombia ; d. National Research Centre (NRC), Egypt; e. Iranian Research Organization for Science & Technology (IROST), Iran; f. International Centre for Environmental and Nuclear Sciences (ICENS), Jamaica; g. Al-Farabi Kazakh National University (KazNU), Kazakhstan; h. National Mathematical Centre (NMC), Nigeria;

	<ul style="list-style-type: none"> i. COMSATS Institute of Information Technology (CIIT), Pakistan; j. Industrial Technology Institute (ITI), Sri Lanka; k. Industrial Research and Consultancy Centre (IRCC), Sudan; l. Higher Institute for Applied Science and Technology (HIAST), Syria; m. Tanzania Industrial Research and Development Organization (TIRDO), Tanzania; n. Water Researches and Technologies Centre of Borj-Cedria (CERTE), Tunisia; <p>B: Presentations by Representatives of Partner Organizations</p> <ul style="list-style-type: none"> a. Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC), Turkey b. International Centre for Genetic Engineering and Biotechnology, Italy
Agenda Item – 8	<p>A: Reports on COMSATS’ International Thematic Research Groups:</p> <ul style="list-style-type: none"> i) “Information and Communication Technologies (ICTs)” by Dr. Arshad Salim Malik, Head International Office, CIIT, Pakistan; ii) “Mathematical Modeling” by Prof. Ejugwu Stephen Onah, Director/Chief Executive, NMC, Nigeria; iii) “Agriculture, Food Security and Biotechnology” by Dr. Widad Hassan, Director General IRCC, Sudan; iv) “Renewable Energy” by Dr. Mahmoud Molanejad, Acting President for International Cooperation, IROST, Iran. <p>B: General Discussion on International Thematic Research Groups</p>
Agenda Item – 9	<p>Discussion on the ongoing programmes:</p> <ul style="list-style-type: none"> i. MS and PhD scholarships ii. Post-doctoral fellowships iii. Tele-health Programme iv. Capacity building activities v. Linking Programmes with Sustainable Development Goals (SDGs) vi. Publications

Agenda Item – 10	Joint Projects by Centres of Excellence having regional significance in line with SDGs <ul style="list-style-type: none">• Preparation of joint project proposals• Possible funding by Governments of Member States and International Agencies• Advocacy by COMSATS
Agenda Item – 11	Formulation of Criteria for evaluation of nominated Centres for induction in COMSATS' Network of Centres of Excellence
Agenda Item – 12	Role of Technical Advisory Committee in enhancing collaborations among Centres of Excellence and their up-gradation
Agenda Item – 13	A: Administrative and Financial Matters of COMSATS B: Restructuring of the Management Committee of COMSATS
Agenda Item – 14	Venue and Schedule for the next (22 nd) Meeting of COMSATS Coordinating Council
Agenda Item – 15	Approval of Communiqué/Any other item with the permission of the Chair

SUMMARY OF DECISIONS

Summary of the decisions made under various Agenda Items

Agenda Item-01: Approval of the Provisional Agenda of the Meeting

- D1 The Provisional Agenda of the meeting, as given in the Working Paper, was unanimously adopted by the Council.

Agenda Item-02: Approval of the Minutes of the 20th Meeting of COMSATS Coordinating Council

- D2 The Coordinating Council unanimously approved the Minutes of its 20th meeting held on 14-15 May 2017, in Cairo, Egypt.

Agenda Item-03: Implementation Status of the Decisions of the 20th Meeting of COMSATS Coordinating Council

- D3 The meeting expressed satisfaction over the actions taken by COMSATS Secretariat for implementation of the decisions of 20th Coordinating Council Meeting, in light of the presentation made by the Advisor (Programmes) COMSATS.

Agenda Item-04: Presentation of COMSATS' Annual Activity Report (May 2017 - March 2018)

- D4.1 The Coordinating Council appreciated the report on COMSATS' activities during May 2017 to March 2018, presented by the Executive Director COMSATS.

Agenda Item-06:

A: Presentation by the Representative of Tianjin Institute of Industrial Biotechnology (TIB), China, in support of its application for the Membership to COMSATS' Network

B: Consideration of the induction of TIB, China, as Network member

- D6.1 The Council unanimously approved the induction of the Tianjin Institute of Industrial Biotechnology, China, in COMSATS' Network as a Centre of Excellence, in the light of the formal application proforma received from the Institute and a detailed presentation by its Deputy Director General.

- D6.2 COMSATS Secretariat will issue a 'Certificate of Membership to COMSATS Network' to TIB.

- D6.3 The Director General of TIB will attend the future meetings of Coordinating Council as a member of the Council.

- D6.4 TIB-China proposed to establish a COMSATS' Centre in the frame of National Center for Technology Innovation in Synthetic Biology (NC SynBio) that would act as an international collaboration hub and would link academia with industry.
- D6.5 TIB-China expressed willingness to join COMSATS' ITRG on 'Natural products Sciences'; 'Agriculture, Food Security and Biotechnology'; and 'Renewable Energy'. TIB also proposed to lead a new ITRG on 'Biodegradable Plastics'.
- D6.6 TIB-China pledged to collaborate with other Centres for technology transfer, microorganisms modelling, carbon dioxide biotransformation as well as identification of natural products to be used as drugs. TIB also offered collaboration for: (i) bi-directional technology transfer; (ii) joint R&D projects under The Belt and Road Initiative; (iii) scientific events related to biotechnology and sustainable development; (iv) training courses; and (v) scholarships for post-doc and PhD students.

Agenda Item-07:

A: Presentation of the Programmes of Centres of Excellence related to South-South Cooperation, Triangular Cooperation, and future plans for COMSATS' Network

- D7.1 BCSIR-Bangladesh offered collaborative research with other Centres of Excellence in materials and metallurgical science and engineering, biomaterials, biochemical and bio fuel (bio refinery), leather/shoe technology, nanotechnology, biotechnology, renewable energy, food safety, essential oil and industrial surfactant, herbal medicine and medicinal plant, and bioequivalence study.
- D7.2 CIF-Colombia offered the following services to COMSATS' Network: (i) intensive courses in biophysics and neurosciences in cooperation with the National University of Colombia; (ii) short courses in specialized topics; (iii) short stays for scientists; (iv) co-direction of MS and PhD thesis in bio-physics; (v) training of young entrepreneurs in industrial experiences of CIF; and (vi) sharing of experiences in science policy.
- D7.3 NRC-Egypt proposed to host a workshop on water shortage and also invited researchers/scientists from academic and research institutions of COMSATS Member States for participation in the research projects to be launched under the umbrella of NRC's 12th Research Plan.
- D7.4 NRC-Egypt offered 05 short-term (1-2 months) fellowships for PhD students from COMSATS Member States in the following areas: (i) textile processing; (ii) plant biotechnology; (iii) polymers; (iv) bioactive materials; and (v) nanotechnology in engineering.

- D7.5 IROST-Iran invited the participation of research scientists belonging to other Centres in the following events scheduled to be held during 2018, with potential support from COMSATS Headquarters:
- i. International Conference/Workshop on 'Water Re-use, Alternative Water Supply'
 - ii. International Workshop on 'Molecular Detection of Genetically Modified Organisms'
 - iii. International Expert Meeting on 'Establishment of COMSATS' Regional Laboratories for Risk Assessment and Detection of Living Modified Organisms (LMOs)'
 - iv. International Seminar/Workshop on 'Food Security by Food Waste Management'
 - v. First International workshop on 'Commercialization of Agricultural Research Results with emphasis on Technology & Know-how Transfer Procedures and Agreement'
- D7.6 ICENS-Jamaica offered collaboration in the following research areas: (i) environmental geochemistry; (ii) trace elements in air particulate matter; (iii) heavy metal pollution; (iv) mineral composition of food; (v) trace elements in animal/human tissue/health; (vi) biogeochemical cycles; (vii) forensics; and (viii) trace and heavy metals in the marine environment.
- D7.7 RSS-Jordan sought the support of other Centres in conducting certified trainings in the following fields: Climate Change (modelling and projection, vulnerability assessment, tools and software for climate change assessment, adaptation, agriculture and water) and mitigation and seismology (landslides hazard, investigation and mitigation; and landfills hazard, investigation and mitigation).
- D7.8 KazNU-Kazakhstan expressed willingness to collaborate with Embrapa Agrobiologia, Brazil; ICCES, China; NRC, Egypt; ICENS, Jamaica; and TÜBİTAK MAM, Turkey, in the fields of mutual interest.
- D7.9 NMC-Nigeria solicited support from CUI-Pakistan for the development of ICT Resource Centre.
- D7.10 CUI-Pakistan expressed willingness to initiate collaboration in the field of cyber security, as well as to organize scientific events in collaboration with other Centres.
- D7.11 ITI-Sri Lanka, in collaboration with ICCES-China, would establish the Center for Extreme Climatic Events & Environmental Research (CECEER) under the MoU signed earlier. ITI also extended offer of collaboration with other Centres for joint research, training and technology transfer.
- D7.12 IRCC-Sudan offered to organize joint capacity building activities in renewable

energy, waste management, products from essential oils, mining, and mechanical design. IRCC pledged to conduct joint research projects in collaboration with ICCBS-Pakistan and Pakistan Council of Scientific and Industrial Research (PCSIR)-Pakistan.

- D7.13 IRCC-Sudan proposed the establishment of COMSATS IT Centre as well as campus of CUI-Pakistan in Sudan.
- D7.14 HIAST-Syria pledged to initiate Tele-health Program in Syria with the support of COMSATS.
- D7.15 HIAST-Syria sought collaboration for student exchange, resource sharing and joint research projects in the following areas: (i) nanotechnology (ferrites materials, microwave absorbing materials, Carbon quantum dots, etc.); (ii) conductive polymers, hydrogels, superabsorbent polymers; and (iii) renewable energy (Solar and fuel cell, hybrid PV systems, biofuel).
- D7.16 TIRDO-Tanzania pledged to collaborate with TUBITAK MAM-Turkey in energy; engineering; food science and technology; biotechnology; materials technology; environment; and chemistry. Moreover, TIRDO will collaborate with IRCC, Sudan, in leather and textile research.
- D7.17 CERTE-Tunisia offered the transfer of following technologies: (i) valorization of wastes of soft drinking industries by production of interest microorganisms and metabolites; (ii) treatment and valorization of the effluents of petroleum production; and (iii) sanitation in rural primary schools (local water management system). CERTE proposed to hold workshops, seminars, international conferences, trainings as well as post-doctoral and doctoral exchange of students for capacity building.

B: Presentations by Representatives of Partner Organizations

- D7.18 ICGEB-Italy pledged to collaborate with COMSATS for arranging joint scholarships, fellowships and workshops in common Member States.
- D7.19 The Council advised the Centres of Excellence to benefit from the programmes and activities of ICGEB-Italy and SESRIC-Turkey in order to achieve common objectives.

Agenda Item-08:

A: Reports on COMSATS' International Thematic Research Groups

- D8.1 The meeting of COMSATS' ITRG on ICTs may be held on the sidelines of the International Conference on Frontiers of Information Technology (FIT) to be held in December 2018, at CUI, Islamabad, subject to the availability of funds.

- D8.2 CUI-Pakistan shall establish a Cyber Security Laboratory.
- D8.3 The Lead Centres of each ITRG shall submit detailed project proposals to COMSATS Headquarters. COMSATS shall play an advocacy role in arranging funds for the execution of the projects from international donor agencies as well as governments of the Member States.

Agenda Item-09: Discussion on the ongoing programmes

- D9.1 The Centres of Excellence shall make efforts to make the best use of 100 postgraduate scholarships offered by CUI, annually.
- D9.2 The Centres of Excellence that have already offered post-doctoral fellowships for COMSATS Member States shall provide details regarding eligibility criteria, sponsorship, duration, deadlines, etc. to COMSATS Headquarters for dissemination among Member States.
- D9.3 Other Centres of Excellence shall also explore the possibility of offering postgraduate scholarships and postdoctoral fellowships.
- D9.4 The Centres of Excellence shall make efforts to launch Tele-health programmes in their respective countries in collaboration with COMSATS Headquarters.
- D9.5 The Centres of Excellence pledged to actively contribute towards COMSATS' publications.

Agenda Item-10: Joint Projects by Centres of Excellence having regional significance in line with SDGs

- D10.1 The Centres of Excellence pledged to initiate joint projects having relevance to the Sustainable Development Goals in order to address their common challenges. The detailed project proposals shall be prepared by the Centres and submitted to COMSATS for facilitation in acquiring funds from donor agencies and governments of Member States.
- D10.2 CIF-Colombia offered to host a regional office of COMSATS for Latin America
- D10.3 NRC-Egypt offered to host a regional office of COMSATS for Africa. In this regard, NRC pledged to cover the salaries of the staff and operational expenses of the regional office, which shall aim at expanding the membership of the Commission and the Network.
- D10.4 ITI-Sri Lanka has opened COMSATS' Desk, which shall continue to promote COMSATS' programmes and activities in Sri Lanka.

Agenda Item-11: Formulation of Criteria for evaluation of nominated Centres for induction in COMSATS' Network of Centres of Excellence

- D11.1 The Council advised COMSATS Headquarters to approach the renowned research centres based in the North and make efforts to induct these in COMSATS' Network.
- D11.2 The Executive Director COMSATS informed that COMSATS Headquarters has assigned the task of preparing criteria for evaluation of nominated Centres for induction in COMSATS' Network to two senior officials (one in Pakistan and one abroad), which shall be sent to all Centres of Excellence for feedback.

Agenda Item-12: Role of Technical Advisory Committee in enhancing collaborations among Centres of Excellence and their up-gradation

- D12.1 The Minutes of 21st Coordinating Council Meeting shall be shared with the members of Technical Advisory Committee (TAC) for information and feedback.
- D12.2 The Council advised COMSATS Headquarters to regularly organize the meetings of COMSATS' Technical Advisory Committee, which may provide concrete recommendations for enhancing collaborations among member of COMSATS' Network for achieving the overall objectives.
- D12.3 The Council advised the Centres of Excellence to nominate one renowned scientist/expert each in order to advise COMSATS Headquarters, when needed.

Agenda Item-13:

A Administrative and Financial Matters of COMSATS

- D13.1 The Coordinating Council showed satisfaction on the administrative and financial affairs of COMSATS. The Council accorded approval to the administrative decisions/actions taken by the Executive Director COMSATS.
- D13.2 The Council approved the Auditor's Report of COMSATS Secretariat for the financial year 2016-17, as well as the organization's budget estimate for 2018-19.
- D13.3 The Heads of Centres of Excellence were encouraged to sensitize their respective Ministries regarding the significance of regularly paying their Annual Membership Contributions towards COMSATS.

B Restructuring of the Management Committee of COMSATS

- D13.4 The Council approved the proposed composition, tenure of members, functions and powers, and frequency of meetings of the Management Committee of COMSATS, as contained in the working paper of 21st Coordinating Council meeting.

Agenda Item-14: Venue and Schedule for the next (22nd) Meeting of COMSATS Coordinating Council

- D14.1 The next (22nd) meeting of the Coordinating Council shall be hosted by TIB-China in 2019.
- D14.2 CERTE-Tunisia was selected as alternative venue in case the meeting could not take place in China due to any unforeseen circumstances.

Agenda Item-15: Approval of Communiqué/Any other item with the permission of the Chair

- D15.1 The Coordinating Council approved the Communiqué of its 21st meeting with minor amendments.
- D15.2 During and after the meeting, the following Centres signed MoUs/Intent of Cooperation for collaboration under the umbrella of COMSATS for achieving common objectives:
- i. NRC-Egypt and BCSIR-Bangladesh;
 - ii. NRC-Egypt and CUI-Pakistan;
 - iii. NRC-Egypt and ICCES-China (to be countersigned by ICCES in China);
and
 - iv. CUI-Pakistan and KazNU-Kazakhstan.

These agreements shall be actively followed up by the concerned Centres and COMSATS Headquarters for implementation.

INAUGURAL SESSION

INAUGURAL SESSION

(Tuesday, April 03, 2018)

The meeting was inaugurated on 3rd April 2018. Apart from the Council members, the inaugural ceremony of the meeting was attended by the senior officials of KazNU and COMSATS, as well as representatives of diplomatic missions of Pakistan and Egypt in Kazakhstan.

During the inaugural ceremony, Prof. Dr. G. M. Mutanov, Rector, KazNU, welcomed the local and foreign participants and expressed pleasure on hosting the meeting. He informed the participants about the recent initiatives taken by the government of Kazakhstan to strengthen the S&T sector in the country as well as to participate in forums of international cooperation. He informed that KazNU has been actively participating in COMSATS' programmes since joining the Network, wherein two COMSATS' capacity building workshops were hosted by the university during 2017. He hoped that the present Council meeting will facilitate KazNU's collaboration with other Centres. He expressed willingness to initiate joint research projects in collaboration with other Centres of Excellence for introducing new technologies for improving the lives of people in the developing countries. He wished the participants a productive meeting.

Speaking on the occasion, Dr. S. M. Junaid Zaidi, Executive Director COMSATS, expressed gratitude towards KazNU for generous hospitality and excellent arrangements for the meeting. He stated that the universal and inclusive nature of the Sustainable Development Goals (SDGs) requires more than ever before to invest in education, health and environment and on the top, forging partnerships and building cross-border cooperation that may facilitate the cross-cultivation of experiences and knowledge; building competencies and reducing the technological gap between the developed and developing nations of the world. He added that Science, Technology and Innovation (STI) is the key for finding solutions to multi-faceted global challenges: from the aftermaths of climate change to the jeopardies of war and conflict to the perils of poverty, hunger and food scarcity. He stated that inscribed in COMSATS' mission, is the need for the achievement of sustainable development through judicious use of science and technology, which is materialized through joint efforts of 21 Centres of Excellence of COMSATS. He opined that the Centres of Excellence have the potential to act as catalysts for achieving the objectives of the Organization. He hoped that the Council in the present meeting shall strategize and determine the future course of action for achieving social, economic and environmental sustainable development in compliance with the '2030 Agenda for Sustainable Development'.

In his inaugural address, Prof. Dr. Ashraf Shaalan, President NRC, Egypt, Chairperson COMSATS Coordinating Council, paid great importance to the scientific and technological cooperation among the developing countries for achieving socio-economic development and preserving the resources and environment at the same time. He considered COMSATS a potent forum for such kind of collaborations. He stated that energy is the backbone for development, and encouraged the Centres of Excellence to collaborate in the field of renewable energy. He also shared with the participants the key

decisions of the 2nd meeting of COMSATS Technical Advisory Committee, which was held in November 2017, in Trieste, Italy, during which the Centres of Excellence were encouraged to initiate joint projects in the areas of the SDGs. He thanked KazNU for the warm hospitality.

At the occasion, Prof. Dr. Tlekkabul Ramazanov, Vice-Rector for Research & Innovations, KazNU read out the messages of the Chairman of the scientific committee at the Ministry of Education and Science, Kazakhstan, as well as the President of the National Academy of Sciences of Kazakhstan. In the messages, the foreign participants were warmly welcomed. The Centres of Excellence were encouraged to determine effective mechanisms of collaboration for seeking new ways for the integration of science and technology and improving the standard of living of the masses.

At the end of the Inaugural Session, a group photo of the participants of the meeting was arranged. The Speeches made during the Inaugural Session are enclosed as **Annexure-II**.

Subsequently, the inaugural ceremony of the 5th International Farabi Readings (3-13 April 2018, Almaty, Kazakhstan) was held on 3rd April 2018, during which Dr. S. M. Junaid Zaidi was awarded the Al-Farabi Gold Medal by the Al-Farabi Kazakh National University (KazNU), Kazakhstan, for his outstanding contributions towards fostering international collaboration in science and technology. The medal was presented to Dr. Zaidi by Prof. Dr. G. M. Mutanov, Rector KazNU. Each year, the gold medals are awarded by KazNU to one Kazakh and one foreign scientist in order to acknowledge their contributions towards science and technology.

On the occasion, Prof. Mutanov paid gratitude to Dr. Zaidi for facilitating the scientific collaboration of KazNU and Kazakhstan with other developing countries. He also shed light on his illustrious career spanning over forty years. He congratulated Dr. Zaidi on establishing the COMSATS University Islamabad (CUI) in Pakistan, which under his leadership since inception in 2000 has grown into a top-ranked university with creditable reputation both nationally and internationally. Prof. Mutanov considered COMSATS a potent forum for facilitating scientific and technical collaboration among the developing countries, and expressed pleasure on his university's affiliation with COMSATS' Network of International S&T Centres of Excellence since May 2015.

While accepting the gold medal, Dr. Zaidi stated that it is a great honour for him, his organization and his country, to have been awarded the Al-Farabi Gold Medal. He admired the enormous contributions made by Al-Farabi in the fields of science, philosophy, mathematics and music, and pledged to follow his legacy and promote his philosophy by all means. Dr. Zaidi admired the high standing of Kazakhstan in various fields of science and technology, and stated that other developing countries can learn a lot from Kazakhstan. He stressed the need of having a stronger cooperation among the developing countries for achieving socio-economic development, for which COMSATS would continue to play an important role.

MINUTES OF THE MEETING

MINUTES
of the
21st Meeting of COMSATS Coordinating Council
3-4 April 2018, Almaty, Kazakhstan

The meeting was Chaired by Prof. Dr. Ashraf Shaalan, President, National Research Centre (NRC), Egypt (Chairperson Coordinating Council). The minutes of the meeting are as follow:

Agenda Item-01:

Approval of the Provisional Agenda of the Meeting

The Chairperson Coordinating Council, Prof. Dr. Ashraf Shaalan, presented the Provisional Agenda of the meeting, as given in the meeting's Working Paper, to the Council for comments/adoption. The Council unanimously approved the Agenda of the meeting.

Decision under Agenda Item-01:

- D1 The Provisional Agenda of the meeting, as given in the Working Paper, was unanimously adopted by the Council.

Agenda Item-02:

Approval of the Minutes of the 20th Meeting of COMSATS Coordinating Council

The 20th Meeting of COMSATS Coordinating Council was held on May 14-15, 2017, at the National Research Centre (NRC), Cairo, Egypt. The draft summary of decisions of the 20th Coordinating Council meeting were circulated among the Council members and other participants on 9th June 2017, while the draft detailed Minutes were circulated on 8th January 2018 for their feedback and consent. In this regard, feedback was received from the Royal Scientific Society (RSS), Jordan, which was duly incorporated in the Minutes. Moreover, the consent of the Chairperson Coordinating Council on the draft Minutes was received on 22nd January 2018. The draft Minutes of the 20th Coordinating Council Meeting were shared with the participants as Doc: 21-CCM-02.

Prof. Dr. Ashraf Shaalan invited suggestions/consent on the Minutes of the 20th Coordinating Council Meeting from the participating Council members. The Minutes of the 20th Coordinating Council Meeting were unanimously approved by the Council.

Decision under Agenda Item-02:

- D2 The Coordinating Council unanimously approved the Minutes of its 20th meeting held on 14-15 May 2017, in Cairo, Egypt.

Agenda Item-03:

Implementation Status of the Decisions of the 20th Meeting of COMSATS Coordinating Council

Mr. Tajammul Hussain, Advisor (Programmes), COMSATS Secretariat, made a detailed presentation on the implementation status of the decisions of the 20th Meeting of COMSATS Coordinating Council, held on 14-15 May 2017, in Cairo, Egypt.

The Advisor (Programmes) informed that as a result of continuous efforts for the expansion of COMSATS' membership, Republic of Turkey and Federal Republic of Somalia joined the Commission during the reporting period. It was also informed that in order to expand the membership further, the Executive Director COMSATS held meetings with the Ambassadors of various countries belonging to Asia, Africa, Middle East, and South America. It was recounted that the nomination of Tianjin Institute of Industrial Biotechnology (TIB) was received from the Government of China, for induction in COMSATS' Network as a Centre of Excellence. While discussing matters related to the Network's expansion, the Advisor (Programmes) recalled that the Council recommended the upgradation of existing and establishment of new Centres of Excellence. In this regard, he informed that COMSATS is approaching the international donor agencies as well as governments of the Member States.

As advised by the Council during its previous meetings, various Centres of Excellence held bilateral visits for furthering the collaboration in research and development. Moreover, it was informed that a delegation from COMSATS' Secretariat visited China in order to explore opportunities of collaboration with ICCES, MOST and CAS, as well as participation in the Belt & Road Initiative. Mr. Hussain informed that in pursuit of its mission, COMSATS organized four (04) capacity building events during the reporting period for the benefit of scientists, researchers, academicians, engineers and technicians belonging to COMSATS Member States. Moreover, as encouraged in the previous Council meeting, COMSATS published its Annual Report, Newsletters and other information material regularly. It was added that COMSATS is making consultations with TWAS in order to publish profiles of more Centres of Excellence.

It was recalled that during and after the 20th Meeting of Coordinating Council, some Centres of Excellence made offers of postgraduate scholarships/postdoctoral fellowships for COMSATS Member States and other Centres of Excellence. In response to CIIT's offer, sixteen (16) nominations were received, out of which six (06) awards have been conferred to Palestinian (02) and Gambian (04) students.

The actions taken by COMSATS Secretariat to follow-up various other collaboration offers extended by Centres of Excellence during the 20th meeting of Coordinating Council were also shared with the participants. It was informed that as a result of these collaboration offers various Memoranda of Understanding are due to be signed among the Centres of Excellence. Furthermore, the Centres which expressed willingness to join ITRGs were encouraged to nominate suitable scientists for the same.

The Council lauded and showed satisfaction over the efforts made by the Secretariat for the implementation of decisions of the 20th Coordinating Council Meeting. The offers of collaboration made by various Centres of Excellence during the 20th Meeting of Coordinating Council were also appreciated and the Centres were urged to make the best utilization of these offers for achieving the objectives of COMSATS Network.

Decisions under Agenda Item-03:

- D3 The meeting expressed satisfaction over the actions taken by COMSATS Secretariat for implementation of the decisions of 20th Coordinating Council Meeting, in light of the presentation made by the Advisor (Programmes) COMSATS.

Agenda Item-04:

Presentation of COMSATS' Annual Activity Report (May 2017-March 2018)

COMSATS' Annual Activity report, highlighting the major activities and achievements of the Organization during the period since the last Council meeting, is presented to the Coordinating Council in the annual meetings. This year, a presentation on COMSATS' Annual Activity Report, covering the period from May 2017 to March 2018, was made by the Executive Director COMSATS, Dr. S. M. Junaid Zaidi.

Dr. Zaidi noted with satisfaction the steady growth of COMSATS' membership across the developing countries with the addition of Turkey and Somalia as new members in the Commission during the reporting period. He recounted that the matter of enhancement of COMSATS' membership was pursued keenly and in this regard, diplomatic missions of Afghanistan, Argentina, Australia, Azerbaijan, Brazil, Cuba, Kenya, Kyrgyz Republic, Malaysia, Nepal, South Africa, Tajikistan, Turkmenistan, Uzbekistan, Vietnam and Yemen were contacted.

It was informed that the 2nd meeting of COMSATS' Technical Advisory Committee (TAC) was held on 15th November 2017 in Trieste, Italy. In the meeting, COMSATS Secretariat was recommended to consolidate and expand its Network; launch new programmes in the light of SDGs; facilitate Triangular Cooperation; and bridge ties with international organizations. In this regard, it was informed that during the reporting period, nomination of Tianjin Institute of Industrial Biotechnology (TIB), China, for induction in COMSATS' Network was received from the Chinese Ministry of Science and Technology. Furthermore, it was stated that the induction process of Mohamed V

University, Morocco; National University of Science and Technology (NUST), Zimbabwe; and Makerere University, Uganda, nominations of which were received earlier, is also underway.

The Executive Director COMSATS also shed light on the progress of COMSATS' Flagship projects i.e. COMSATS Internet Services (CIS) and COMSATS Tele-Health Programme (CTH). The publications brought out by the Secretariat during the reporting period were also highlighted. It was informed that the Governments of China, Iran, Kazakhstan, Pakistan and Sudan made their Annual Membership Contributions (AMC) during the period 2017-2018. It was mentioned that visits were paid by COMSATS' officials to several Member States with the purpose to strengthen the cooperation in science, technology and innovation. In this connection, the foreign missions of COMSATS Member States were also engaged in order to seek their support for the active involvement of their respective countries in COMSATS' programmes and activities.

Dr. Zaidi apprised the Council of the re-alignment of COMSATS' activities with South-North-South Triangular Cooperation. He informed that in this regard, institutions of the North were approached for seeking financial and technical assistance in order to expand COMSATS' Network, strengthen institutional capacities and to explore areas of mutual interest for joint ventures. With this objective, meetings were held with several institutions viz. British Council, Universities UK, Association of Commonwealth Universities, Commonwealth Secretariat; Lancaster University; European Union (EU); and Department for International Development (DFID), Pakistan.

It was informed that during the reporting period, COMSATS joined hands with the following national and international bodies by signing Memoranda of Understanding for cooperation in areas of mutual interest:

- Institute of Peace and Diplomatic Studies (IPD), 22nd June 2017;
- Oman National Computer Emergency Readiness Team (OCERT), 2nd November 2017;
- United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), 20th December 2017; and
- Pacific Islands Development Forum (PIDF), 12th March 2018

Dr. Zaidi stated that in order to build the competencies and enhance the capacities of scientific community in its Member States, each year COMSATS conducts several scientific events and also provides sponsorship in the form of travel grants to scientists for participation in scientific activities around the globe. During the reporting period, COMSATS extended a financial assistance of US\$ 39,716 to thirty-six (36) scientists for participation in fourteen (14) scientific events. Besides, COMSATS organized following four (04) capacity building events in cooperation with ISESCO:

- 4th International Workshop on 'Applications of ICTs in Education, Healthcare and Agriculture', 25-27 July 2017, Abuja, Nigeria.

- 10th National Workshop on 'Repair and Maintenance of Scientific, Engineering Equipment in Universities, Research Institutions and Small Scale Industries', 2-6 October 2017, Almaty, Kazakhstan.
- 1st International Congress on Viruses and Vaccines in Tropical Areas, 11-12 October 2017, Sere Kunda, The Gambia.
- 7th International Workshop on 'Internet Security: Enhancing Information Exchange Safeguards', 19-23 December 2017, Almaty, Kazakhstan.

The Executive Director also shared the future plans of the organization during the forthcoming years. He mentioned that COMSATS is aspiring to further expand its membership and establish new Centres of Excellence. The latter matter, he added, has already been taken up with the Governments of China and Nigeria. He stated that COMSATS is planning to bring sustainability within its Member States with the support and patronage of the North. In this regard, it was informed that efforts will be made to initiate cooperation with the countries of the North. He also encouraged the Member States and Centres of Excellence to make the best use of their inherent resources for achieving the objectives of the Network.

The Council appreciated the Annual Activity report of COMSATS (May 2017 - March 2018) and endorsed the future plans of the Organization.

Decisions under Agenda Item-04:

- D4.1 The Coordinating Council appreciated the report on COMSATS' activities during May 2017 to March 2018, presented by the Executive Director COMSATS.

Agenda Item-05:

Presentation by Mr. Elias Bonilla, Chairman, Edibon International, Spain

The Chairman of Edibon International, Spain, Dr. Elias Bonilla made a detailed presentation on the products and services offered by his company. He mentioned that Edibon is a designer, manufacturer and supplier of fully integrated engineering laboratories for technical teaching and research; hence it provides a complete solution to the specific needs of the customer. He stated that Edibon also helps in technology installation and thereafter providing training and sales services.

Dr. Bonilla recounted that Edibon has multiple global partners; it is working bilaterally and multilaterally with numerous international financial institutions such as Asian Development Bank (ADB), European Union (EU), The United Nations Educational, Scientific and Cultural Organization (UNESCO), The United Nations Industrial Development Organization (UNIDO), and Inter-American Development Bank (IDB). He added that Edibon technologies are being used in several countries around the globe and by numerous well-reputed academic institutes such as Massachusetts Institute of

Technology (MIT), Massachusetts; Singapore Institute of Technology, Singapore; and Harvard University, Massachusetts.

The Council was briefed about the innovative technologies and systems being used by Edibon viz. Supervisory Control And Data Acquisition (SCADA), Programmable Logic Controller (PLC), Interactive Computer Aided Instruction (ICAI) Software System, and Faults Simulation System (FSS). It was also informed that SCADA System has been expanded to develop following applications: UCP Process Control Unit; SCADA + PLC Control (Real Industrial System); SCADA–Net System (ESN); and EDIBON Cloud Learning (ECL).

Furthermore, Dr. Bonilla shed light on the development of uni- and multi-component industrial teaching units; their use for reducing the processing time of technical education project cycle; as well as their applications in various fields of S&T. While talking about the financial aspects, he mentioned that Edibon provides soft-loans in collaboration with the Spanish government after endorsement from financial institutions of applicant's country.

Subsequent to the presentation by Dr. Bonilla, the floor was opened for questions and answers. Responding to a query from Dr. Mahmoud Molanejad, Acting President for International Cooperation, IROST, Iran, Dr. Bonilla informed that fast loans are available for all countries, including Iran, if the projects involving the Edibon technologies are attractive. However, guarantees are needed from the relevant institutions of the applicant's country.

Agenda Item-06:

A: Presentation by the Representative of Tianjin Institute of Industrial Biotechnology (TIB), China, in support of its application for the Membership to COMSATS' Network

The Chinese Ministry of Science and Technology (MOST) had nominated the Tianjin Institute of Industrial Biotechnology (TIB), China, on 18th December 2017, for induction in COMSATS' Network of International S&T Centres of Excellence. A three-member delegation of COMSATS led by Dr. S. M. Junaid Zaidi visited TIB, China, on 21st December 2017. The representative of TIB, China, was invited to participate in the 21st Council meeting with reference to the Institute's request for joining COMSATS' Network.

In this regard, a presentation on the scientific programmes and activities as well as future plans of TIB, China, was made by the Deputy Director-General of the Institute, Prof. Jibin Sun. It was informed that the Institute, launched in 2007, employs industrial biotechnology for providing green sustainable solutions. He added that in terms of technology transfer, TIB is ranked top 10 among more than 100 institutes of Chinese Academy of Sciences (CAS), China.

Prof. Jibin briefed the participants about the organizational structure and model, research areas, core facilities, human resource, products, as well as research output of the Institute during the past ten years. Furthermore, it was informed that in the pursuit of its mission, TIB catalyzes transition from agricultural plantation, chemical processing, and fossil based resources to industrial manufacturing, bioprocessing, and renewable resources respectively.

The Deputy Director-General TIB mentioned that the Institute is collaborating regionally and internationally with several industries, enterprises as well as R&D institutes for technology transfer and industrialization. It was informed that TIB has partnered with more than 140 Chinese companies; has established 20 joint labs with the companies apart from establishing 04 industrialization bases with the local governments and enterprises. Prof. Jibin highlighted that TIB has transferred thirty 30 technologies to various industries including pharmaceutical, chemical, textile, fermentation, biomaterials and enzyme industry. Internationally, TIB is collaborating with R&D universities from more than 20 countries and has established partnership with more than 10 international organizations. It was mentioned that through international collaborations, TIB has been successful in establishing joint laboratory of Systems Biotechnology along with initiating several collaborative R&D projects. Moreover, under the framework of international partnerships, TIB has exchanged scholars, provided trainings to PhD students, and conducted numerous international workshops.

It was recounted that TIB is planning to establish the National Technology Innovation Centre for Synthetic Biology (NC SynBio) in the forthcoming years to boost the development of disruptive technologies in synthetic biology. It was proposed to establish a COMSATS' Centre in the frame of National Center for Technology Innovation in Synthetic Biology (NC SynBio) that would act as an international collaboration hub and would link academia with industry. Additionally, Prof. Jibin mentioned that TIB plans to scale-up its campus wherein 12 key technology R&D platforms, a facility core, and an incubation centre will be established.

The Deputy Director-General TIB also expressed willingness to participate in COMSATS' ITRG on 'Natural Products'; 'Agriculture, Food Security and Biotechnology'; and 'Renewable Energy' and also proposed launching an ITRG on 'Biodegradable Plastics'. Furthermore, he extended various S&T cooperation requests for technology transfer, microorganisms modelling, carbondioxide (CO₂) biotransformation as well as identification of natural products to be used as drugs.

In collaboration with COMSATS, Prof. Jibin offered to take up the following initiatives: (i) Bi-directional technology transfer; (ii) Joint R&D projects under The Belt and Road Initiative; (iii) Scientific events related to biotechnology and sustainable development; (iv) Training courses; and (v) Scholarships for Post-doc and PhD students.

Subsequently, the floor was opened for questions and answers. Responding to a query from Dr. Eduardo Posada F., Director CIF, Colombia, Prof. Jibin informed that the projects to be executed by 20 labs of TIB are selected based on the needs of industries.

In this regard, TIB also facilitates the establishment of companies as an outcome of these projects.

Prof. Dr. Raheel Qamar, Rector CUI, Pakistan, noted that the rate of patent conversion is less than 10% in the world, while the patent conversion rate of TIB is 30%. He sought the reasons for this remarkable conversion rate. Prof. Jibin informed that the high patent conversion rate is due to a high percentage of market-driven projects being executed by TIB. Responding to a query from Dr. Lugano Wilson Mwansule, Senior Researcher, TIRDO, Tanzania, Prof. Jibin informed that TIB is also working on bio-mass for fuel generation for transportation. While answering a query from Prof. Ahmed Ghrabi, Director General CERTE, Tunisia, Prof. Jibin informed that TIB uses starch/sugar and industrial waste-water as ingredients for generating bio-plastics.

Mr. Tajammul Hussain, Advisor (Programmes) informed that TIB has done a miracle job in the field of research and commercialization during 2012 to 2018. In this regard, the Chinese government has allocated an amount of US\$ 88 million for further upgradation of TIB. He added that TIB is an excellent example of Research Centre-Academia-Industry partnership. Prof. Dr. Ashraf Shaalan, President NRC, Egypt, and Prof. Dr. Raheel Qamar, Rector CUI, Pakistan, also praised the excellent activities being performed by TIB.

B: Consideration of the induction of TIB, China, as Network member

In the light of the formal application Proforma received earlier and a comprehensive presentation on the Institute's scientific profile by its Deputy Director-General, the Council unanimously approved the induction of TIB, China, in COMSATS' Network as a Centre of Excellence. It was agreed that the Director-General of TIB will be invited to attend the future meetings of the Coordinating Council as a member of the Council.

Decisions under Agenda Item-06:

- D6.1 The Council unanimously approved the induction of the Tianjin Institute of Industrial Biotechnology, China, in COMSATS' Network as a Centre of Excellence, in the light of the formal application proforma received from the Institute and a detailed presentation by its Deputy Director General.
- D6.2 COMSATS Secretariat will issue a 'Certificate of Membership to COMSATS Network' to TIB.
- D6.3 The Director General of TIB will attend the future meetings of Coordinating Council as a member of the Council.
- D6.4 TIB-China proposed to establish a COMSATS' Centre in the frame of National Center for Technology Innovation in Synthetic Biology (NC SynBio) that would act as an international collaboration hub and would link academia with industry.

- D6.5 TIB-China expressed willingness to join COMSATS' ITRG on 'Natural products Sciences'; 'Agriculture, Food Security and Biotechnology'; and 'Renewable Energy'. TIB also proposed to lead a new ITRG on 'Biodegradable Plastics'.
- D6.6 TIB-China pledged to collaborate with other Centres for technology transfer, microorganisms modelling, carbondioxide biotransformation as well as identification of natural products to be used as drugs. TIB also offered collaboration for: (i) bi-directional technology transfer; (ii) joint R&D projects under The Belt and Road Initiative; (iii) scientific events related to biotechnology and sustainable development; (iv) training courses; and (v) scholarships for post-doc and PhD students.

Agenda Item-07:

A: Presentation of the Programmes of Centres of Excellence related to South-South Cooperation, Triangular Cooperation, and future plans for COMSATS' Network

Under this agenda item, presentations were made by the Council members (or their representatives) from Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh; Embrapa Agrobiologia, Brazil; International Centre of Physics (CIF), Colombia; National Research Centre (NRC), Egypt; Iranian Research Organization for Science and Technology (IROST), Iran; International Centre for Environmental Nuclear Sciences (ICENS), Jamaica; Al-Farabi Kazakh National University (KazNU), Kazakhstan; National Mathematical Centre (NMC), Nigeria; COMSATS Institute of Information Technology (CIIT), Pakistan; Industrial Technology Institute (ITI), Sri Lanka; Industrial Research and Consultancy Centre (IRCC), Sudan; Higher Institute for Applied Sciences and Technology (HIAST), Syria; Tanzania Industrial Research and Development Organization (TIRDO), Tanzania; and Centre for Water researches and Technologies (CERTE), Tunisia. The presentations gave an overview of the scientific programmes and activities of the participating Centres of Excellence along with their on-going and future collaborations with other Centres. The salient features of the presentations made under this agenda item are given below:

a) Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh;

Dr. Md. Sarwar Jahan, Director, BCSIR Laboratories, Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh, briefed the meeting about the management, organizational structure, human resource, and core areas of research of his organization. He gave a detailed account of research divisions at BCSIR while elaborating various R&D projects and products developed by BCSIR laboratories housed at Dhaka and Chittagong. Dr. Jahan informed that the Institute of National Analytical Research & Service (INARS), BCSIR, has been accredited by Bangladesh Accreditation Board (BAB) and is committed to work for the SDG-6 on "Clean Water and Sanitation".

He also mentioned that BCSIR has established various research facilities for advanced research, innovation and technology transfer.

It was informed that during the reporting period, BCSIR organized in-house trainings on sophisticated laboratory instruments, trainings for armed forces personnel and scientific workforce in industries as well as trainings for general public. Dr. Jahan extended offer of collaborative research to other Centres of Excellence in materials and metallurgical science and engineering, biomaterials, biochemical and bio fuel (bio refinery), leather/shoe technology, nanotechnology, biotechnology, renewable energy, food safety, essential oil and industrial surfactant, herbal medicine and medicinal plant, and bioequivalence study.

b) Embrapa Agrobiologia, Brazil;

Dr. Robert Boddey, Research Scientist, Embrapa Agrobiologia, Brazil, informed that Embrapa is the Brazilian Agricultural Research Corporation under the Ministry of Agriculture, Livestock and Food Supply, Brazil. Its 46 research centres are conducting research on various aspects of agriculture with a focus on biological nitrogen fixation. The Council was apprised of the organic farm housed at Embrapa Agrobiologia as well as various R&D facilities available at the Centre. He added that Embrapa Agrobiologia has established a network of experiments for research and technology transfer and also offers training in microbiology and molecular biology.

Dr. Boddey informed about the on-going collaborations of the Centre with Savanna Agricultural Research Institute (SARI), the Council for Scientific and Industrial Research (CSIR), Ghana; and National Institute of Agricultural Sciences (INCA), Cuba. It was also informed that Embrapa Agrobiologia is one of the actors in the cooperative project funded by PROCISUR (Cooperative Program for the Agroalimentary and Agroindustrial Technological Development of the Southern Cone).

Furthermore, Dr. Boddey mentioned that Embrapa Agrobiologia has extended its outreach to countries such as Argentina, Colombia, Germany, England, France, Portugal, Uruguay, USA, Cuba, Mexico, Ghana and Kenya for joint ventures in research and development. He expressed intent to build partnerships with institutions within and beyond Brazil for the execution of R&D projects.

c) International Centre for Physics (CIF), Colombia;

Prof. Dr. Eduardo Posada F., Director, International Centre for Physics (CIF), Colombia, gave a briefing on the projects undertaken by various research groups at CIF in following areas: (i) biophysics and tropical diseases; (ii) biophysics of cellular signaling; (iii) cellular neurophysiology; (iv) applied optics; (v) materials science; (vi) environmental biotechnology; and (vii) applied physics and technological development. He informed that CIF has established ties with international organizations such as ICTP, TWAS, Max Planck Institute, Gottingen, Ecole de Physique et Chimie, Paris, Paris VI NYW, and Biophysics Institute Woodshole.

Prof. Posada offered following services to COMSATS' Network: (i) intensive courses in biophysics and neurosciences in cooperation with the National University of Colombia; (ii) short courses in specialized topics; (iii) short stays for scientists; (iv) co-direction of MS and PhD thesis in bio-physics; (v) training of young entrepreneurs in industrial experiences of CIF; and (vi) sharing of experiences in science policy.

d) National Research Centre (NRC), Egypt;

Prof. Hosam El-Sayed, Assistant Vice President for Research, NRC, Egypt, gave an account of the past and ongoing collaboration between COMSATS and NRC. With regard to the on-going collaborations of NRC, he apprised the Council of the formalization of an MoU between NRC and ICCES-China. It was further informed that NRC has strengthened ties with COMSATS Member States including Jordan, Kazakhstan, Morocco, Sudan, Tanzania and Tunisia, by signing agreements with their respective governments.

For joint ventures in the future, Prof. El-Sayed proposed hosting a workshop on water shortage and also invited researchers/scientists from academic and research institutions of COMSATS Member States for participation in the research projects to be launched under the umbrella of NRC 12th Research Plan.

Prof. Shaalan also offered 05 short-term (1-2 months) fellowships for COMSATS Member States in the following areas: (i) Textile Processing; (ii) Plant Biotechnology; (iii) Polymers; (iv) Bioactive Materials; and (v) Nanotechnology in Engineering. He also elaborated the on-going research projects under each of the afore-mentioned areas.

e) Iranian Research Organization for Science and Technology (IROST), Iran;

Dr. Mahmoud Molanejad, Acting President for International Cooperation, Iranian Research Organization for Science and Technology (IROST), Iran, gave an overview of the Organization, its mission, objectives, structure and facilities. He highlighted the achievements and activities of IROST during the reporting period including the establishment of Madjid Samii International Center for Scientific Research and Medical Technology, and setting-up of Joint Cooperation Committee between IROST and Aachen University, Germany.

Regarding the on-going collaborations of IROST, Dr. Molanejad apprised the Council of the approval of joint research projects between IROST and Sultanate of Oman and joint cooperative research project with Germany, Brazil and Sri Lanka. He also enlisted the scientific activities to be organized by various institutes of IROST during the year 2018. Dr. Molanejad invited the participation of research scientists belonging to other Centres in the following events scheduled to be held during 2018, with potential support from COMSATS Headquarters: (i) International Conference/Workshop on 'Water Re-use, Alternative Water Supply'; (ii) International Workshop on 'Molecular Detection of Genetically Modified Organisms'; (iii) International Expert Meeting on 'Establishment of COMSATS' Regional Laboratories for Risk Assessment and Detection of Living

Modified Organisms (LMOs)'; and (iv) International Seminar/Workshop on 'Food Security by Food Waste Management'; (v) First International workshop on 'Commercialization of Agricultural Research Results with emphasis on Technology & Know-how Transfer Procedures and Agreement'.

f) International Centre for Environmental Nuclear Sciences (ICENS), Jamaica;

The Head of the Nuclear Analytical Laboratory, International Centre for Environmental Nuclear Sciences (ICENS), Jamaica, Mr. Johann Antoine briefed about the history, organizational structure, research facilities, as well as on-going and future projects of ICENS. He stated that ICENS has hosted several TWAS fellows from countries including Nigeria. Mr. Antoine mentioned that ICENS is collaborating internationally with IAEA/ARCAL, PAHO/WHO, TWAS, Namibia University of Science and Technology, and Pure Earth.

Furthermore, he extended offers of collaboration to COMSATS' Network in the following research areas: (i) Environmental Geochemistry; (ii) Trace Elements in Air Particulate Matter; (iii) Heavy Metal Pollution; (iv) Mineral composition of food; (v) Trace elements in animal/human tissue/ Health; (vi) Biogeochemical Cycles; (vii) Forensics; and (viii) Trace and heavy metals in the marine environment.

g) Al-Farabi Kazakh National University (KazNU), Kazakhstan;

Prof. Tlekkabul Ramazanov, Vice-Rector for Science & Innovations, Al-Farabi Kazakh National University (KazNU), Kazakhstan, gave a detailed account of structure, faculties, research and socio-humanity institutes, as well as human resource of KazNU. He highlighted the R&D achievements of KazNU during the reporting period and briefed about the various technological zones, centres, and parks established at university. He mentioned that KazNU holds the membership of several international organizations including COMSATS, World University Consortium (WUC), Clinton Global Initiative University (CGIU), Alliance of universities of Silk Road countries (Silk-road Universities Network), and World Academy of Art and Science (WAAS). He added that KazNU is the Global Hub for Sustainable Development of United Nations Academic Impact (UNAI) as well as Regional Hub for Sustainable Development within the framework of the UNESCO Program –UNITWIN.

In connection with the on-going collaborations of KazNU with COMSATS' Network, Prof. Ramazanov stated that KazNU is in partnership with International Center for Chemical and Biological Sciences (ICCBS), Pakistan, for the capacity development in phytochemicals. He also mentioned that KazNU and Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, China, have signed an agreement for the establishment of "China–Kazakhstan Joint Research Centre for Remote Sensing" at KazNU.

Further, he outlined the goals of the University for the year 2019 and expressed desire to partner with Embrapa Agrobiologia, Brazil; ICCES, China; NRC, Egypt; ICENS, Jamaica; and TÜBITAK MAM, Turkey.

h) National Mathematical Centre (NMC), Nigeria;

In his presentation, Prof. Stephen E. Onah, Director/Chief Executive, National Mathematical Centre (NMC), Nigeria, informed that Nigeria is being benefitted from various programmes and activities of COMSATS which, inter alia, include scholarship schemes, capacity building events, and sponsorships in the form of travel grants. In connection with the on-going collaborations between NMC and COMSATS University Islamabad (CUI), Pakistan, which was initiated in the last quarter of 2017, it was informed that in addition to joint research projects in a wide spectrum of areas related to Mathematical Sciences, NMC and CUI have also joined hands for sharing resources such as scientific literature. Prof. Onah also mentioned that NMC has solicited support from CUI for the development of ICT Resource Centre at NMC.

Regarding future initiatives, Prof. Onah pledged to generate innovative topics for ITRG on 'Mathematical Modelling'. He also expressed intent for bilateral visits between NMC and other Centres of Excellence for exploring avenues of collaboration and launching joint projects in line with UN Sustainable Development Goals (SDGs).

i) COMSATS University Islamabad (CUI), Pakistan;

The Rector of COMSATS University Islamabad (CUI), Pakistan, Prof. Dr. Raheel Qamar gave an account of the faculties, departments and human resources of CUI. Prof. Qamar highlighted the achievements of the university during the reporting period including the national and international rankings. He also shed light on the initiatives taken, projects launched and various scientific events moderated by CUI during the reporting period. Prof. Qamar informed that CUI has introduced hybrid mode of teaching, and is also encouraging the development of companies through its incubation centre.

While reflecting upon the collaborations under the umbrella of COMSATS, Prof. Qamar stated that CUI envisions establishing new campuses and increasing cooperation with COMSATS' Member States. Further, he added that, to date, 900 students from Bangladesh, China, Gambia, Iran, Jordan, Nigeria, Palestine, Somalia, Sudan, Turkey and Tanzania have been benefited from the scholarships offered by CUI. He expressed intent to initiate collaboration in the field of cyber security and collaboration for expert exchange and organization of scientific events such as science forum.

j) Industrial Technology Institute (ITI), Sri Lanka;

In his presentation, Dr. G.A.S. Premakumara, Director General of Industrial Technology Institute (ITI), Sri Lanka, gave an overview of the mission, vision, objectives, organizational structure, and infrastructure developments at the Institute. He highlighted ITI's major technology transfers, publications, communications and patents

as well as scientific activities carried out by ITI and also informed about the research initiatives undertaken by the Institute, recently.

Regarding the on-going and future collaborations with COMSATS Centres of Excellence, Dr. Premakumara stated that an MoU has been signed between ICCES, China, and ITI, Sri Lanka. Under this MoU, establishment of a “Center for Extreme Climatic Events & Environmental Research (CECEER)” at ITI is underway. Dr. Premakumara extended S&T cooperation offers to other Network Members and COMSATS Member States for joint research work, training facilities and technology transfers.

k) Industrial Research and Consultancy Centre (IRCC), Sudan;

Dr. Widad Hassan Abdel Halim Hassan, Director-General, Industrial Research and Consultancy Centre (IRCC), Sudan, gave an account of the history, organizational structure, human resource, R&D facilities and divisions, major activities, as well as the budget of IRCC for the reporting period. She informed that IRCC has signed agreements with four states to establish its regional and state branches. She also stated that during 2017, IRCC executed 20 research projects, released 26 publications, won 03 awards, along with conducting various capacity building activities, developing industrial partnerships for various projects, and carrying out infrastructure and rehabilitation projects.

Dr. Widad mentioned that in 2017, IRCC signed an agreement with UNSECO Chair on Transfer of Technology and a Protocol of Cooperation with the Pakistan Council of Scientific and Industrial Research (PCSIR), Pakistan. Further, she expressed willingness to continue joint research projects with PCSIR-Pakistan and ICCBS-Pakistan. Regarding future prospects, Dr. Widad proposed conducting capacity building activities in renewable energy, waste management, products from essential oils, mining, and mechanical design. Dr. Widad also proposed the establishment of COMSATS IT Centre as well as a campus of CUI in Sudan.

l) Higher Institute for Applied Sciences and Technology (HIAST), Syria;

The Director of Higher Institute for Applied Sciences and Technology (HIAST), Syria, Dr. Maher Suleiman introduced HIAST as an institute of higher education conducting research in diverse areas related to electronics, physics, ICTs and telecommunication. He gave a briefing on the organizational structure, its human resource, fields of interest and various R&D activities undertaken by the Institute. Further, he shed light on the awards and achievements of HIAST during the reporting period including the publishing of 8 scientific books and 19 papers in journals of international repute.

He apprised the Council of the nascent collaboration between HIAST and (i) Iranian Research Organization for Science & Technology (IROST), Iran, in Solar and fuel cell and hybrid PV systems; (ii) Water Researches and Technologies Centre of Borj-Cedria (CERTE), Tunisia, in Waste water treatment; and (iii) Advanced Materials and Nanotechnology Research Center, Iran, in microwave absorbing materials. He added

that HIAST is planning to initiate Tele-Health Program in Syria with the support of COMSATS.

Dr. Suleiman sought collaboration with R&D organizations in COMSATS Member States for student exchange, resource sharing and joint research projects in the following areas: (i) Nanotechnology (ferrites materials, microwave absorbing materials, Carbon quantum dots, etc.); (ii) Conductive polymers, hydrogels, superabsorbent polymers; and (iii) Renewable energy (Solar and fuel cell, hybrid PV systems, biofuel).

m) Tanzania Industrial Research and Development Organization (TIRDO), Tanzania;

Dr. Lugano Wilson Mwansule, Director, Engineering Development, Tanzania Industrial Research and Development Organization (TIRDO), Tanzania, highlighted the mission along with the key functions and the core departments of the Organization.

The Council was acquainted, by Dr. Mwansule, with the on-going collaborations of TIRDO with other Centres of Excellence. In this regard, it was informed that TIRDO signed a Memorandum of Understanding (MoU) with TÜBİTAK Marmara Research Center (TÜBİTAK MAM), Turkey in 2016. The MoU aimed at technical cooperation in Energy; Engineering; Food science and Technology; Biotechnology; Materials technology; Environment; and Chemistry. Furthermore, it was shared that collaboration between TIRDO and Industrial Research and Consultancy Centre (IRCC), Sudan, in leather and textile research is in initial stages. Dr. Mwansule stated that a scientist from TIRDO is also participating in COMSATS' ITRG on 'Mathematic Modeling'.

Dr. Mwansule expressed willingness for collaboration with TÜBİTAK MAM, Turkey, and IRCC, Sudan, as well as other Centres of Excellence for joint research projects, capacity building activities, expert exchange, and technology transfer.

n) Centre for Water researches and Technologies (CERTE), Tunisia.

The Director General of Water Researches and Technologies Centre of Borj-Cedria (CERTE), Tunisia, Prof. Ahmed Ghrabi gave an overview of the Centre and highlighted the scientific activities and research output of CERTE during the reporting period. Prof. Ghrabi also enumerated the regional and international academic institutes, research organizations and industries with which CERTE has partnered.

Regarding the on-going programmes of the Centre, it was informed that CERTE is executing projects with countries such as France, Germany and Morocco. Moreover, Prof. Ghrabi mentioned that CERTE has been a partner in projects on Water-Works (IRESA) and Water Saving in Agriculture (WASA) executed under European Union: H2020 in the year 2017. Currently, he stated, CERTE is working on a project on salt in transformation in partnership with University of Berlin, Germany, DAAD.

Prof. Ghrabi mentioned that CERTE has successfully transferred following technologies to the industries for the benefit of society: (i) valorization of wastes of soft drinking

industries by production of interest microorganisms and metabolites; (ii) treatment and valorization of the effluents of petroleum production; and (iii) sanitation in rural primary schools (local water management system). In order to strengthen networking among Centres of Excellence, Prof. Ghrabi offered support to COMSATS Member States and Centres of Excellence in water sector. He proposed to hold workshops, seminar, international conferences, trainings as well as post-doctoral and doctoral exchange of students for enhancing and building capacity.

B: Presentation by Representatives of Partner Organizations

Under this agenda-item, the representatives of two international partner organizations, i.e. ICGEB-Italy and SESRIC-Turkey made their presentations. The representative of ISESCO-Morocco could not participate in the meeting; however, remarks of Director General ISESCO were received and circulated among the participants.

a) International Centre for Genetic Engineering and Biotechnology (ICGEB), Italy

In her presentation, Ms. Maria Luisa Fichera, Chief, Legal & Administration, International Centre for Genetic Engineering and Biotechnology (ICGEB), Italy, mentioned that ICGEB is an International Organization working in cutting-edge research, training and technology transfer in life sciences. It was informed that the Centre comprises of more than 80 signatory countries, more than 60 member states, and 03 components, and operates through six instruments. These instruments, she delineated are (i) research; (ii) fellowships; (iii) meetings, courses and workshops; (iv) grants; (v) technology transfer; and (vi) scientific and advisory services. She added that ICGEB has 47 research groups in three of its components where more than 600 scientists are conducting research on cancer, infectious and non-infectious diseases, food security, and biofuels.

Ms. Maria also highlighted the scientific output of the Centre during the period 2010-2016 and informed that ICGEB received research grants from international scientific bodies lodged in UK, USA, Canada, France, and South Africa. Moreover, for technology transfer, ICGEB has established partnership with industries in more than 20 different countries including 09 COMSATS Member States.

b) Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC), Turkey

Dr. Atilla Karaman, Researcher at Statistics and Information Department of Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC), Turkey, in his presentation, informed that SESRIC is one of the six and also the first Subsidiary Organ of the Organization of Islamic Cooperation (OIC). A network of Standing Committees, Specialized and Affiliated Institutions, as well as Universities is also linked with OIC. Further, 57 resource-rich countries also hold membership of OIC.

Dr. Karaman mentioned that tri-fold mandate of SESRIC, i.e. Statistics, Research and Training, is geared to achieve technical cooperation in the Islamic World. He stated that SESRIC cooperates with its partners (OIC, national and international institutions, and NGOs) through various modes such as policy dialogue, strategic vision, networking, capacity building, skill development, and transferring know-how & innovation. In connection with meeting SDGs and OIC-2025 TypoA, Dr. Karaman also outlined the strategies of SESRIC.

c) The Islamic, Educational, Scientific and Cultural Organization (ISESCO), Morocco

In his message, Director General of Islamic Educational, Scientific and Cultural Organization (ISESCO), Morocco, H.E. Dr. Abdulaziz Othman Altwaijri extended gratitude to COMSATS and Al-Farabi Kazakh National University (KazNU), Kazakhstan, and expressed pleasure on the organization of 21st Coordinating Council meeting. He noted that COMSATS and ISESCO have joined hands since 2004 for the promotion of Science, Technology and Innovation (STI) in common Member States and for building partnerships for international scientific cooperation. In his remarks, Dr. Altwaijri highlighted that COMSATS and ISESCO Centre for Promotion of Scientific Research (ICPSR) have jointly facilitated the networking of scientific institutions, faculties and scientists. He enumerated the scientific activities undertaken through COMSATS-ISESCO joint cooperation during the period 2016-17 and desired to extend this cooperation in future.

Decisions under Agenda Item-07:

- D7.1 BCSIR-Bangladesh offered collaborative research with other Centres of Excellence in materials and metallurgical science and engineering, biomaterials, biochemical and bio fuel (bio refinery), leather/shoe technology, nanotechnology, biotechnology, renewable energy, food safety, essential oil and industrial surfactant, herbal medicine and medicinal plant, and bioequivalence study.
- D7.2 CIF-Colombia offered the following services to COMSATS' Network: (i) intensive courses in biophysics and neurosciences in cooperation with the National University of Colombia; (ii) short courses in specialized topics; (iii) short stays for scientists; (iv) co-direction of MS and PhD thesis in bio-physics; (v) training of young entrepreneurs in industrial experiences of CIF; and (vi) sharing of experiences in science policy.
- D7.3 NRC-Egypt proposed to host a workshop on water shortage and also invited researchers/scientists from academic and research institutions of COMSATS Member States for participation in the research projects to be launched under the umbrella of NRC's 12th Research Plan.
- D7.4 NRC-Egypt offered 05 short-term (1-2 months) fellowships for PhD students from COMSATS Member States in the following areas: (i) textile processing;

- (ii) plant biotechnology; (iii) polymers; (iv) bioactive materials; and (v) nanotechnology in engineering.
- D7.5 IROST-Iran invited the participation of research scientists belonging to other Centres in the following events scheduled to be held during 2018, with potential support from COMSATS Headquarters:
- i. International Conference/Workshop on ‘Water Re-use, Alternative Water Supply’
 - ii. International Workshop on ‘Molecular Detection of Genetically Modified Organisms’
 - iii. International Expert Meeting on ‘Establishment of COMSATS’ Regional Laboratories for Risk Assessment and Detection of Living Modified Organisms (LMOs)’
 - iv. International Seminar/Workshop on ‘Food Security by Food Waste Management’
 - v. First International workshop on ‘Commercialization of Agricultural Research Results with emphasis on Technology & Know-how Transfer Procedures and Agreement’
- D7.6 ICENS-Jamaica offered collaboration in the following research areas: (i) environmental geochemistry; (ii) trace elements in air particulate matter; (iii) heavy metal pollution; (iv) mineral composition of food; (v) trace elements in animal/human tissue/health; (vi) biogeochemical cycles; (vii) forensics; and (viii) trace and heavy metals in the marine environment.
- D7.7 RSS-Jordan sought the support of other Centres in conducting certified trainings in the following fields: Climate Change (modelling and projection, vulnerability assessment, tools and software for climate change assessment, adaptation, agriculture and water) and mitigation and seismology (landslides hazard, investigation and mitigation; and landfills hazard, investigation and mitigation).
- D7.8 KazNU-Kazakhstan expressed willingness to collaborate with Embrapa Agrobiologia, Brazil; ICCES, China; NRC, Egypt; ICENS, Jamaica; and TÜBITAK MAM, Turkey, in the fields of mutual interest.
- D7.9 NMC-Nigeria solicited support from CUI-Pakistan for the development of ICT Resource Centre.
- D7.10 CUI-Pakistan expressed willingness to initiate collaboration in the field of cyber security, as well as to organize scientific events in collaboration with other Centres.
- D7.11 ITI-Sri Lanka, in collaboration with ICCES-China, would establish the Center for Extreme Climatic Events & Environmental Research (CECEER) under the MoU signed earlier. ITI also extended offer of collaboration with other Centres

for joint research, training and technology transfer.

- D7.12 IRCC-Sudan offered to organize joint capacity building activities in renewable energy, waste management, products from essential oils, mining, and mechanical design. IRCC pledged to conduct joint research projects in collaboration with ICCBS-Pakistan and Pakistan Council of Scientific and Industrial Research (PCSIR)-Pakistan.
- D7.13 IRCC-Sudan proposed the establishment of COMSATS IT Centre as well as campus of CUI-Pakistan in Sudan.
- D7.14 HIAST-Syria pledged to initiate Tele-health Program in Syria with the support of COMSATS.
- D7.15 HIAST-Syria sought collaboration for student exchange, resource sharing and joint research projects in the following areas: (i) nanotechnology (ferrites materials, microwave absorbing materials, Carbon quantum dots, etc.); (ii) conductive polymers, hydrogels, superabsorbent polymers; and (iii) renewable energy (Solar and fuel cell, hybrid PV systems, biofuel).
- D7.16 TIRDO-Tanzania pledged to collaborate with TUBITAK MAM-Turkey in energy; engineering; food science and technology; biotechnology; materials technology; environment; and chemistry. Moreover, TIRDO will collaborate with IRCC, Sudan, in leather and textile research.
- D7.17 CERTE-Tunisia offered the transfer of following technologies: (i) valorization of wastes of soft drinking industries by production of interest microorganisms and metabolites; (ii) treatment and valorization of the effluents of petroleum production; and (iii) sanitation in rural primary schools (local water management system). CERTE proposed to hold workshops, seminars, international conferences, trainings as well as post-doctoral and doctoral exchange of students for capacity building.
- D7.18 ICGEB-Italy pledged to collaborate with COMSATS for arranging joint scholarships, fellowships and workshops in common Member States.
- D7.19 The Council advised the Centres of Excellence to benefit from the programmes and activities of ICGEB-Italy and SESRIC-Turkey in order to achieve common objectives.

Agenda Item-8:

A: Reports on COMSATS' International Thematic Research Groups

The representatives of the Lead Centre of International Thematic Research Groups (ITRGs) on 'Information and Communication Technologies (ICTs)'; 'Mathematical Modeling'; 'Agriculture, Food Security and Biotechnology'; and 'Renewable Energy'

presented the progress reports of their respective groups covering the period from May 2017-March 2018. These reports have been summarized below:

i) Information and Communication Technologies (ICTs)

Dr. Arshad Salim Malik, Head, International Office at COMSATS University Islamabad (CUI), Pakistan, while presenting the report, enlisted the research themes of the group as: (i) Big Data and IoT; (ii) Cloud Computing; (iii) e-Solutions; and (iv) Cyber Security. He also highlighted the key elements of the projects being executed under the above-mentioned themes. He noted with satisfaction that CUI has launched the Hybrid Learning Initiative under the umbrella of this thematic group. Furthermore, he enumerated the publications made under the aegis of each of the various research themes.

Dr. Malik mentioned that various capacity building events were organized through the platform of this group during the reporting period. In this regard, Dr. Malik expressed the desire to organize the meeting of COMSATS' ITRG on ICTs on the sidelines of the International Conference on Frontiers of Information Technology (FIT) to be held in December 2018, at CUI, Islamabad, subject to the availability of funds.

While talking about the future plans, Dr. Malik informed that the proposal for the establishment of Cyber Security Laboratory has been duly submitted. He stressed upon the need to establish a Centre of Excellence in IoT and Cloud Computing and Data Science and a Centre on Cyber Security.

ii) Mathematical Modeling

Prof. Ejugwu Stephen Onah, Director/Chief Executive, National Mathematical Centre (NMC), Nigeria, presented the report of the ITRG on 'Mathematical Modeling' which is working on project entitled 'Mathematical Modeling and Simulation of Air and Water pollution: Effects and Remedies'.

It was informed that the group is conducting research in the following aspects: (i) water pollution with chemical substances; (ii) greenhouse gases; (iii) heavy metals; (iv) carcinogens, and (v) microbes. Prof. Onah also shared with the participants the major findings of the research projects conducted on greenhouse gases emission in Nigeria and Tanzania; mathematical study of biodiversity in a polluted environment; and evolutionary study of cancer cells using numeric simulation.

iii) Renewable Energy

Dr. Mahmoud Molanejad, Acting President for International Cooperation, Iranian Research Organization for Science & Technology (IROST), Iran, stated that during the foundation meeting of the group that was held on 2nd November 2016, the project entitled "Measurement and Characterization of Silicon Crystalline Solar Cell" was

selected for execution. It was informed that scientists belonging to Syria, Kazakhstan, Bangladesh and Iran are participating in this project. He also invited scientists from other Member States for participation in the group.

While discussing the difficulties being faced by the group in acquiring funds for the execution of the afore-mentioned research project, Dr. Molanejad requested COMSATS Headquarters to play an advocacy role in this regard.

i) Agriculture, Food Security and Biotechnology

Dr. Widad Hassan Abdel Halim Hassan, Director General, Industrial Research and Consultancy Centre (IRCC), Sudan, informed that the ITRG on 'Agriculture, Food Security and Biotechnology' could not make any progress with regard to the execution of project entitled 'Improvement of Wheat Quality and Productivity Using both Traditional and Modern Techniques' due to financial constraints.

B: General Discussion on International Thematic Research Groups

The Executive Director stated that the success of the ITRG programme can contribute greatly towards achieving the objectives of COMSATS, and may result in the establishment of new Research Centres. In this regard, he requested the Lead Centres of each ITRG to submit detailed project proposal to COMSATS Headquarters. It was agreed that COMSATS shall play an advocacy role in arranging funds for the execution of the projects from international donor agencies as well as governments of the Member States. He informed that COMSATS has already approached the government of China in order to explore opportunities of funding for such projects under the Belt and Road Initiative (BRI). He proposed that a few state-of-the-art laboratories may be established in COMSATS' Member States under BRI. It was also informed that a workshop is being planned to be organized by COMSATS in China in order to highlight the opportunities of collaboration available under BRI, in which all Council members would be invited.

The Executive Director also informed the participants about the Seminar on 'Contribution of EU Research and Innovation (FP9) to the UN SDGs' being held on 22nd May 2018 at Irish Embassy in Brussels, Belgium. An email received from Mr. Declan Kirrane, CEO of Intelligence in Science (ISC), who is one of the main organizers of the event, was also shared with the participants. It was informed that COMSATS would request the Focal Points in Member States to participate in this event through their Embassies in Brussels.

Prof. Dr. Ashraf Shaalan, President NRC, Egypt, endorsed the suggestions of the Executive Director, and encouraged the Group Leaders to prepare good project proposals having significance for achieving the UN Sustainable Development Goals. Prof. Dr. Raheel Qamar, Rector CUI, Pakistan, advised that the Group Leaders may determine the time-line for the activities of their respective projects. Prof. Jibin Sun, Deputy Director-General TIB, China, proposed that each Member State may financially support the research activities being performed by its centre/institutions in the overall execution of the project.

Decisions under Agenda Item-08:

- D8.1 The meeting of COMSATS' ITRG on ICTs may be held on the sidelines of the International Conference on Frontiers of Information Technology (FIT) to be held in December 2018, at CUI, Islamabad, subject to the availability of funds.
- D8.2 CUI-Pakistan shall establish a Cyber Security Laboratory.
- D8.3 The Lead Centres of each ITRG shall submit detailed project proposals to COMSATS Headquarters. COMSATS shall play an advocacy role in arranging funds for the execution of the projects from international donor agencies as well as governments of the Member States.

Agenda Item-09:

Discussion on the ongoing programmes

i. MS and PhD scholarships

The Executive Director recalled that the COMSATS University Islamabad (CUI) has offered 100 postgraduate scholarships, annually, to researchers/students belonging to the Member States. He informed that only 25 of these scholarships have been availed. He requested the Centres of Excellence to publicize these scholarships in their respective countries and to make efforts to utilize the same. The Executive Director also requested other Centres of Excellence to offer postgraduate scholarships for the Member States.

ii. Post-doctoral fellowships

The Executive Director recalled that during and after the 20th Coordinating Council Meeting CUI-Pakistan, ICCBS-Pakistan, NRC-Egypt, ICCES-China, BCSIR-Bangladesh, and KazNU-Kazakhstan offered post-doctoral fellowships for COMSATS' Member States. He requested these Centres to provide details regarding eligibility criteria, sponsorship, duration, deadlines, etc. to COMSATS Headquarters for dissemination among Member States. He also requested other Centres of Excellence to explore the possibility of offering such fellowships.

Prof. Dr. Ashraf Shaalan, President NRC, Egypt, stated that the details regarding fellowships offered by NRC would soon be sent to COMSATS. He proposed that a brochure may be prepared by COMSATS Headquarters, mentioning information regarding the fellowships, as soon as the same is received from the Centres of Excellence.

iii. Tele-health Programme

Prof. Dr. Ashraf Shaalan, President NRC, Egypt, stated that COMSATS' Tele-health Programme is an excellent initiative, which has a huge potential in contributing towards the healthcare sectors of the developing countries. He proposed that this programme may be replicated in other Member States in order to fulfill the needs of their marginalized communities. He noted that COMSATS is willing to share its expertise in this field with other Centres of Excellence and Member States.

iv. Capacity building activities

The Executive Director shed light on the past and ongoing capacity building activities of COMSATS in the Member States. Prof. Dr. Raheel Qamar, Rector CUI, Pakistan, appreciated the contributions made by COMSATS towards the capacity building of Member States, and encouraged to organize more of such focused trainings in future.

v. Linking Programmes with Sustainable Development Goals (SDGs)

Prof. Dr. Ashraf Shaalan, President NRC, Egypt, noted that science and technology can contribute in achieving all of the 17 Sustainable Development Goals (SDGs). Therefore, he urged the Centres of Excellence to identify a few SDGs that are of common interest, and initiate collaboration for achieving the same.

vi. Publications

The Executive Director requested the Centres of Excellence to actively contribute towards COMSATS' publications.

Decisions under Agenda Item-09:

- D9.1 The Centres of Excellence shall make efforts to make the best use of 100 postgraduate scholarships offered by CUI, annually.
- D9.2 The Centres of Excellence that have already offered post-doctoral fellowships for COMSATS Member States shall provide details regarding eligibility criteria, sponsorship, duration, deadlines, etc. to COMSATS Headquarters for dissemination among Member States.
- D9.3 Other Centres of Excellence shall also explore the possibility of offering postgraduate scholarships and postdoctoral fellowships.
- D9.4 The Centres of Excellence shall make efforts to launch Tele-health programmes in their respective countries in collaboration with COMSATS Headquarters.
- D9.5 The Centres of Excellence pledged to actively contribute towards COMSATS' publications.

Agenda Item-10:

Joint Projects by Centres of Excellence having regional significance in line with SDGs

Prof. Dr. Ashraf Shaalan, President NRC, Egypt, stated that new joint research projects may be launched by the Centres of Excellence in order to achieve mutual objectives as well as to contribute towards socio-economic development of the Member States.

The Executive Director informed that COMSATS has started approaching the international organizations and donor agencies, including Commonwealth, European Union, British Council, etc. in order to explore the possibility of receiving funds for joint projects to be executed by the Centres of Excellence. He stressed that the projects must be in-line with SDGs and may focus on hot topics such as climate change. He, therefore, requested the Centres of Excellence to prepare detailed project proposals, which shall be submitted by COMSATS to the international donor agencies and governments of Member States in order to facilitate in acquisition of funds.

In order to promote COMSATS' programmes in Latin America, Prof. Eduardo Posada F., Director CIF, Colombia, proposed to host a regional office of COMSATS for Latin America. Similarly, Prof. Dr. Ashraf Shaalan, President NRC, Egypt, stated that NRC would open a regional office of COMSATS for Africa. In this regard, he pledged to cover the salaries of the staff and operational expenses of the regional office, which shall aim at expanding the membership of the Commission and the Network. It was informed by Dr. G. A. S. Premakumara, Director General ITI, Sri Lanka, that ITI has already opened COMSATS' Desk, which shall continue to promote COMSATS' programmes and activities in Sri Lanka.

Decisions under Agenda Item-10:

- D10.1 The Centres of Excellence pledged to initiate joint projects having relevance to the Sustainable Development Goals in order to address their common challenges. The detailed project proposals shall be prepared by the Centres and submitted to COMSATS for facilitation in acquiring funds from donor agencies and governments of Member States.
- D10.2 CIF-Colombia offered to host a regional office of COMSATS for Latin America
- D10.3 NRC-Egypt offered to host a regional office of COMSATS for Africa. In this regard, NRC pledged to cover the salaries of the staff and operational expenses of the regional office, which shall aim at expanding the membership of the Commission and the Network.
- D10.4 ITI-Sri Lanka has opened COMSATS' Desk, which shall continue to promote COMSATS' programmes and activities in Sri Lanka.

Agenda Item-11:

Formulation of Criteria for evaluation of nominated Centres for induction in COMSATS' Network of Centres of Excellence

Prof. Dr. Ashraf Shaalan, President NRC, Egypt, advised COMSATS Headquarters to approach the renowned research centres based in the North and make efforts to induct these in COMSATS' Network. Endorsing the advice of Prof. Shaalan, the Executive Director informed that COMSATS Headquarters has assigned the task of preparing criteria for evaluation of nominated Centres for induction in COMSATS' Network to two senior officials (one in Pakistan and one abroad), which shall be sent to all Centres of Excellence for feedback.

Decisions under Agenda Item-11:

- D11.1 The Council advised COMSATS Headquarters to approach the renowned research centres based in the North and make efforts to induct these in COMSATS' Network.
- D11.2 The Executive Director COMSATS informed that COMSATS Headquarters has assigned the task of preparing criteria for evaluation of nominated Centres for induction in COMSATS' Network to two senior officials (one in Pakistan and one abroad), which shall be sent to all Centres of Excellence for feedback.

Agenda Item-12:

Role of Technical Advisory Committee in enhancing collaborations among Centres of Excellence and their up-gradation

Prof. Dr. Ashraf Shaalan, President NRC, Egypt, stated that the role of COMSATS' Technical Advisory Committee (TAC) is crucial for achieving the objectives of the Network. He advised COMSATS Headquarters to regularly organize the meetings of COMSATS' Technical Advisory Committee, which may provide concrete recommendations for enhancing collaborations among member of COMSATS' Network for achieving the overall objectives. He also proposed that the Minutes of 21st Coordinating Council Meeting may be shared with the members of TAC for information and feedback.

The Executive Director requested the Centres of Excellence to nominate one renowned scientist/expert each in order to advise COMSATS Headquarters, when needed. Prof. Jibin Sun, Deputy Director-General TIB, China, also recognized the important role of TAC in determining the way forward for COMSATS' Centres of Excellence.

Decisions under Agenda Item-12:

- D12.1 The Minutes of 21st Coordinating Council Meeting shall be shared with the members of Technical Advisory Committee (TAC) for information and feedback.
- D12.2 The Council advised COMSATS Headquarters to regularly organize the meetings of COMSATS' Technical Advisory Committee, which may provide concrete recommendations for enhancing collaborations among member of COMSATS' Network for achieving the overall objectives.
- D12.3 The Council advised the Centres of Excellence to nominate one renowned scientist/expert each in order to advise COMSATS Headquarters, when needed.

Agenda Item-13:

A: Administrative and Financial Matters of COMSATS

Mr. Tajammul Hussain, Advisor (Programmes), made a detailed presentation on the Administrative and Financial Matters of COMSATS Secretariat during the period 2017-2018 as well as the budget estimates for 2018-19. It was informed that during 2017-18, some rules were amended/approved and following Seven Standing Orders were issued: Revision of Mileage Allowance/Taxi charge; Revision of M.Phil. Allowance; Grant of Adhoc Relief to COMSATS Employees, Revision of Pay Scale of BPS-22 (Executive Director), and Revision of Orderly Allowance; Revision of Daily Allowance (within the country); Revision of Conveyance and Maintenance Allowance of Director (CPS-20); Provision of Security Guards at the Residence of Employees of COMSATS; and Amendment in CPF Rules. Mr. Hussain also shared the details of above-mentioned Standing Orders with the Council.

The Advisor (Programmes) presented the Auditor's Report and summary of audited accounts of COMSATS Secretariat for financial year ended on 30th June 2017 for the approval of the Coordinating Council. He also presented the budget estimates for financial year 2018-19 for the approval of the Coordinating Council. The details of Annual Membership Contribution (AMC) by Member States were also shared with the Council. It was informed that since the last Coordinating Council Meeting, five member states i.e. China (US\$ 20,007), Iran (US\$ 10,000), Kazakhstan (US\$ 20,000), Pakistan (US\$ 20,000) and Sudan (US\$ 3,000) have made their Annual Membership Contributions (AMC) to COMSATS. It was recounted that the government of the host country, Pakistan, provides an annual grant of PKR 40 million (US \$0.4 million) for the operational expenditures of COMSATS Secretariat. In this regard, it was informed that the Government of Pakistan has been requested to increase the annual budget for meeting the operational expenses.

Mr. Hussain also shed light on the current holdings of the COMSATS Endowment Fund and requested the Council members to persuade their respective governments to make contributions towards COMSATS Endowment Fund, as well as to regularly pay their Annual Membership Contribution (AMC) to COMSATS.

The Coordinating Council showed satisfaction on the administrative and financial affairs of COMSATS. The Council approved the auditor’s report of COMSATS Secretariat for financial year 2016-17 as well as the budget of the organization for 2018-19.

B: Restructuring of the Management Committee of COMSATS

Mr. Tajammul Hussain, Advisor (Programmes), recalled that soon after the establishment of COMSATS in 1994, a Management Committee was constituted to take policy decisions, frame rules and regulations relating to establishment matters and look after its day to day affairs efficiently and effectively. Previously, the committee was reconstituted in the year 2010 and it has now been felt that the constitution of the Managing Committee needs to be restructured as some members have completed their tenure.

In light of the above, the following composition, tenure of members, functions and powers, and frequency of meetings of the Management Committee of COMSATS were proposed for approval of the Coordinating Council:

a) Executive Director, COMSATS	Chairperson
b) A Representative of Ministry of Science and Technology, Govt. of Pakistan	Member
c) Rector, CIIT or his nominee	Member
d) Chief Executive Officer, CIS	Member
e) Director (A&E), COMSATS Secretariat	Member/Secretary
f) Advisor (Programmes), COMSATS Secretariat	Member
g) Director (Finance & Accounts) COMSATS	Member
h) Two Scientists/Engineers/experts to be nominated by Executive Director for a tenure of three years	Member
i) Two representatives from Member States	Member

Tenure of Members:

Tenure of two Scientists/Engineers/experts will be for a term of 3 years.

Functions and Powers of Management Committee

- To ensure implementation of policy decisions taken by the Coordinating Council and other organs of COMSATS;
- To create an institutional approach to decision making based on consultation;
- To approve programmes and budget of COMSATS;
- To monitor financial activities of COMSATS, consider and examine audit reports of COMSATS Secretariat and other Projects;
- To approve rules and regulations;
- To consider any other important issue deemed fit for inclusion in the agenda by Executive Director, COMSATS.
- To co-opt members of the Management Committee for particular issues.

Meetings:

The Managing Committee shall meet at least twice a year and more often in accordance with requirements.

The Council approved the above-mentioned composition, tenure of members, functions and powers, and frequency of meetings of the Management Committee of COMSATS.

Decisions under Agenda Item-13:

- D13.1 The Coordinating Council showed satisfaction on the administrative and financial affairs of COMSATS. The Council accorded approval to the administrative decisions/actions taken by the Executive Director COMSATS.
- D13.2 The Council approved the Auditor's Report of COMSATS Secretariat for the financial year 2016-17, as well as the organization's budget estimate for 2018-19.
- D13.3 The Heads of Centres of Excellence were encouraged to sensitize their respective Ministries regarding the significance of regularly paying their Annual Membership Contributions towards COMSATS.
- D13.4 The Council approved the proposed composition, tenure of members, functions and powers, and frequency of meetings of the Management Committee of COMSATS, as contained in the working paper of 21st Coordinating Council meeting.

Agenda Item-14:

Venue and Schedule for the next (22nd) Meeting of COMSATS Coordinating Council

Prof. Jibin Sun, Deputy Director-General, Tianjin Institute of Industrial Technology (TIB), China, offered to host the 22nd meeting of COMSATS Coordinating Council. The Coordinating Council gratefully appreciated the offer. It was decided that the next (22nd) meeting of the Coordinating Council shall be hosted by TIB-China in 2019.

Moreover, CERTE-Tunisia was selected as alternative venue in case the meeting could not take place in China due to any unforeseen circumstances.

Decisions under Agenda Item-14:

- D14.1 The next (22nd) meeting of the Coordinating Council shall be hosted by TIB-China in 2019.
- D14.2 CERTE-Tunisia was selected as alternative venue in case the meeting could not take place in China due to any unforeseen circumstances.

Agenda Item-15:

Approval of Communiqué/Any other item with the permission of the Chair

The draft Communiqué of the 21st Coordinating Council Meeting was made available to the participants for consideration/comments. The Chairperson Coordinating Council sought comments/suggestions of the Council members on the draft Communiqué. In this regard, a minor amendment was proposed by the representative of CUI-Pakistan.

The Coordinating Council approved the Communiqué of its 21st meeting with minor amendments (**Annexure-III**).

Moreover, during and after the meeting, the following Centres signed MoUs/Intent of Cooperation for collaboration under the umbrella of COMSATS for achieving common objectives:

- i. NRC-Egypt and BCSIR-Bangladesh;
- ii. NRC-Egypt and CUI-Pakistan;
- iii. NRC-Egypt and ICCES-China (to be countersigned by ICCES in China); and
- iv. CUI-Pakistan and KazNU-Kazakhstan.

It was decided that these agreements shall be actively followed up by the concerned Centres and COMSATS Headquarters for implementation.

Decision under Agenda Item-15:

- D15.1 The Coordinating Council approved the Communiqué of its 21st meeting with minor amendments.
- D15.2 During and after the meeting, the following Centres signed MoUs/Intent of Cooperation for collaboration under the umbrella of COMSATS for achieving common objectives:
- v. NRC-Egypt and BCSIR-Bangladesh;
 - vi. NRC-Egypt and CUI-Pakistan;
 - vii. NRC-Egypt and ICCES-China (to be countersigned by ICCES in China);
and
 - viii. CUI-Pakistan and KazNU-Kazakhstan.

These agreements shall be actively followed up by the concerned Centres and COMSATS Headquarters for implementation.

CLOSING SESSION

CLOSING SESSION

During the closing ceremony of the meeting held on 4th April 2018, the Executive Director COMSATS paid gratitude to the organizing committees of KazNU and COMSATS for making excellent arrangements for the meeting. He hoped that the Centres of Excellence would actively contribute towards achieving the sustainable development goals through South-South and Triangular Cooperation in science and technology. The President NRC (Chairperson Coordinating Council) thanked the organizers for their tireless efforts. He looked forward to visiting the laboratories of KazNU on the following day in order to explore opportunities of collaboration. The Vice-Rector for Research & Innovations, KazNU, stated that it was an honour for KazNU to have hosted the meeting and looked forward to active collaboration of KazNU with other Centres of Excellence.

The session concluded with the distribution of souvenirs among all participants of the meeting as well as the local organizing committee members by Executive Director COMSATS and Vice-Rector KazNU.

VISIT TO KAZNU LABORATORIES

VISIT TO KAZNU LABORATORIES

The host institution, KazNU-Kazakhstan arranged visits of the participants of the meeting to its various departments and laboratories on 5th April 2018. The participants learnt about the activities and available facilities of KazNU laboratories. The visits were conducted by senior officials of these departments/laboratories, which facilitated the exchange of knowledge and information needed for enhanced scientific cooperation among the Network members.

LIST OF ANNEXURES

Annexure-I: List of Participants along with their postal and e-mail addresses

Annexure-II: Speeches made during the Inaugural Session

Annexure-III: Communiqué of the 21st Coordinating Council Meeting

Annexure-I

List of Participants along with their postal and e-mail addresses

**21ST MEETING OF COMSATS COORDINATING COUNCIL,
ALMATY, KAZAKHSTAN, APRIL 3-4, 2018**

LIST OF PARTICIPANTS

Centres of Excellence:

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2.	BRAZIL	<p>Dr. Robert Boddey Research Scientist Embrapa Agrobiologia Rod. Br 465, Km 47 - CEP 23851-970 Caixa Postal 74.505 - Seropedica Rio de Janerio Brazil</p>	<p>Email: robert.boddey@embrapa.br</p>
3.	EGYPT	<p>Prof. Dr. Ashraf Shaalan President, National Research Centre (NRC), El-Bohouth Street (El-Tahrir Street), Dokki, P. O. Box 12622, Cairo, Egypt</p>	<p>Tel: 0020-2-33371010, 33354971 Fax: 0020-2-33370931, 7601877 Mobile: 0020-101402126 Email: president@nrc.sci.eg ashaalan@asrt.sci.eg URL: www.nrc.sci.eg</p>
4.		<p>Prof. Hosam El-Sayed Assistant Vice President for Research Professor of Textile Chemistry and Technology National Research Centre 33, Tahrir St., 12311-Dokki, Cairo, Arab Republic of Egypt.</p>	<p>Fax: (+20-2) 33370931/33322424 Email: hosam@trdegypt.org & hosam2@yahoo.com</p>

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8.	KAZAKHSTAN	<p>Prof. Dr. G. M. Mutanov Rector Al-Farabi Kazakh National University (KazNU) 050040 Almaty, Al-Farabi Ave. 71 Republic of Kazakhstan</p>	<p>Tel: 007-727-377-33-11 Fax: 007-727-377-33-11 URL: www.kaznu.kz/en/ Email: rector@kaznu.kz</p>
9.		<p>Prof. Dr. Tlekkabul Ramazanov Vice-Rector for Research & Innovations Al Farabi Kazakh National University (KazNU) 71, Al-Farabi Ave., Almaty, 050040, Republic of Kazakhstan.</p>	<p>Tel.: (+7-727) 3773333-1122 Fax: (+7-727) 3773189 E-mail: tlekkabul.ramazanov@kaznu.kz</p>

10.	NIGERIA	<p>Prof. Stephen E. Onah Director/Chief Executive National Mathematical Centre (NMC) Kaduna-Lokoja Road, Sheda-Kwali P.M.B 118, GWAGWALADA Abuja Nigeria</p>	<p>Tel: 00234-805-5744348 Email: director@nmcabuja.org; ajusonah2001@yahoo.com URL: www.nmcabuja.org</p>
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17.	SYRIA	Dr. Maher Suleiman Director, Higher Institute for Applied Science and Technology (HIASST), P.O. Box 31983, Damascus, Syria	Tel: 00963-11-5123819 Fax: 00963-11-2237710 E-mail: maher.suleiman@hiast.edu.sy URL: www.hiast.edu.sy
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19.	TUNISIA	Prof. Ahmed Ghrabi Director General, Water Researches and Technologies Centre of Borj-Cedria (CERTe), Route touristique de Soliman, Ecopark of Borj Cedria, BP. 273, 8020 Soliman, Tunisia	Tel: 00216-79-325122/79, 325199 Fax: 00216-79-325802 Email: ahmed.ghrabi@certe.rnrt.tn URL: www.certe.rnrt.tn

New Centre of Excellence:

20.	CHINA	Prof. Jibin Sun Deputy Director-General Tianjin Institute of Industrial Technology (TIB) Tianjin 300308, China	Email: sunjibin@tib.cas.cn
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International Partners/Observers:

21.	ICGEB	Ms. Maria Luisa Fichera Chief, Legal & Administration International Centre for Genetic Engineering and Biotechnology (ICGEB), Cod. Fisc. 90031700322 AREA Science Park, Padriciano 99, 34149 Trieste, Italy	Email: MariaLuisa.Fichera@icgeb.org
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Annexure-II

Speeches made during the Inaugural Session

Opening Remarks
by

Prof. Dr. G. M. Mutanov

Rector, Al-Farabi Kazakh National University
(KazNU), Almaty, Kazakhstan

**Dear COMSATS Executive Director Mr. Sayed Mohammed
Junaid Zaidi!**

**Dear Chairman of the Coordination Council Mr. Ashraf Hamed
Musa Shaalan!**

Dear guests!

On behalf of Al-Farabi Kazakh National University, I am pleased to welcome all participants of the 21st Meeting of the Coordination Council of COMSATS.

Hosting such a great event of world leading organization, which unites the countries of Asia, Africa, Latin and Central America in Al-Farabi university is a significant event not only for Kazakhstan, but also for the entire CIS.

For Al-Farabi KazNU, which is a well-known world university and the UNAI hub for Sustainable Development, partnership with the COMSATS Excellence Centers is one of the top areas of international and scientific innovation activities.

Our university serves as an ambassador of the state foreign policy in the global arena. We actively cooperate with the countries of the South with the aim of implementing President of Kazakhstan Nursultan Nazarbayev's initiatives on support of scientific and technological modernization in the Islamic Community, which was approved by Astana Declaration of the first summit of the Organization of Islamic Cooperation (OIC) on Science and Technology.

As a member of COMSATS since 2015, scientists and students of our University take part in joint research and innovation projects and trainings at leading universities of COMSATS member countries.

Last year, we organized two events with COMSATS and with ISESCO. National Seminar on Scientific and Engineering Equipment in Universities and the 7th International Seminar on Cyber Security.

Thus, cooperation with COMSATS Centers is a unique opportunity not only to learn about scientific and technological developments of scientists from the South, but also a good platform to present our own achievements and to ensure the experience, knowledge and technologies transfer for sustainable development of all countries of the South.

Dear guests!

Our university intends to continue developing close cooperation with COMSATS members by adopting knowledge and sharing our own experience for sustainable development, integration of science, education and production.

Our main goal is to improve the level of life of the citizens of our countries by introduction of new technologies into business, service, production and government activities, and resolving common problems by the exchange of our strengths.

Thank you for your attention!

Introductory Remarks
By
Dr. Syed Muhammed Junaid
Zaidi

Executive Director COMSATS
Islamabad, Pakistan

INTRODUCTORY REMARKS

by

DR. S. M. JUNAID ZAIDI, EXECUTIVE DIRECTOR COMSATS

**(21st Meeting of COMSATS Coordinating Council,
Almaty, Kazakhstan 3-4 April 2018)**

- Honourable Prof. Dr. G. M. Mutanov, Rector, Al-Farabi Kazakh National University, Kazakhstan
- Honourable Prof. Dr. Ashraf Shaalan, President, National Research Centre, Egypt, and Chairperson COMSATS Coordinating Council
- Honourable Prof. Dr. Tlekkabul Ramazanov, Vice Rector for Research & Innovations, Al-Farabi Kazakh National University, Kazakhstan
- Honourable Members of COMSATS Coordinating Council
- Honourable Members of Diplomatic Community of COMSATS Member States
- Honourable Representatives of International Partner Organizations
- Distinguished Guests, Ladies and Gentleman

Good Morning and Assalamualaikum!

On behalf of the Commission on Science and Technology for Sustainable Development in the South (COMSATS), it is an honour and immense pleasure for me to welcome you all to the inaugural ceremony of the 21st meeting of COMSATS' Coordinating Council. This year's Council meeting is being hosted by the Al-Farabi Kazakh National University (KazNU), which is a Centre of Excellence of COMSATS and among the top-ranked universities of the world. We are grateful to KazNU for making impeccable arrangements and extending warm hospitality to all participants. I would like to extend my special gratitude to the honourable Rector and Vice Rector of KazNU for the cooperation and support they extended for the organization of this meeting. The commitment of the Republic of Kazakhstan and Al-Farabi Kazakh National University towards COMSATS is indeed appreciable.

I am immensely thankful to the Council members and other foreign participants for taking out time and travelling long distances for this meeting. I am also grateful to the diplomatic community of COMSATS Member States; representatives of R&D organizations, academic institutions, government and private-sector organizations based in Kazakhstan as well as the officials and scientists of KazNU who have all gathered here, which indeed reflects their commitment towards achieving science-led sustainable development in the South.

Ladies and Gentleman!

There has been a long-standing commitment for the achievement of sustainable growth by bringing equality and peace through education, science and technology while protecting the environment at the same time. This commitment, under the umbrella of United Nations, initially took the form of Millennium Development Goals (MDGs) and later on transfigured into Sustainable Development Goals (SDGs). The universal and inclusive nature of sustainable development goals requires more than ever before to invest in education, health and environment and on the top, forging partnerships and building cross-border cooperation that may facilitate the cross-cultivation of experiences and knowledge; building competencies and reducing the technological gap between the developed and developing nations of the world.

Science, Technology and Innovation (STI) is the key for finding solutions to multi-faceted global challenges: from the aftermaths of climate change to the jeopardies of war and conflict to the perils of poverty, hunger and food scarcity. Inscribed in COMSATS' mission, is the need for the achievement of sustainable development through judicious use of science and technology, which is materialized through joint efforts of 21 Centres of Excellence of COMSATS. I must say that these Centres of Excellence have the potential to act as catalysts for achieving the objectives of the Organization.

Ladies and Gentleman,

There lies within the South, a rich reservoir of resources and competencies, which needs to be rightly tapped in order to achieving socio-economic development. The prescribed cooperation for development has evolved over time from North-South to South-South and then to South-North-South, commonly known as Triangular Cooperation. The international organizations based in Europe are planning to invest billions of dollars in the developing countries, particularly Africa, in order to facilitate the development. Moreover, the People's Republic of China has set a tremendous example of regional cooperation by launching Belt and Road Initiative (BRI) which is benefiting 13 of 26 Member States of COMSATS. Initiatives of such kind and others engaging multiple stakeholders are the need of the hour. The presence of the representatives of international partner organizations based in North in the meeting is expected to put energy and momentum into the efforts for facilitating Triangular cooperation.

The Coordinating Council is an effective forum for technical and South-South cooperation. It is hoped that the Council in the present meeting shall strategize and determine the future course of action for achieving social, economic and environmental sustainable development in compliance with the '2030 Agenda for Sustainable Development'.

I would like to appreciate the hard work of the officials of COMSATS Headquarters for the preparation of detailed working paper and other documents of the meeting as well as providing maximum facilitation to the delegates. The efforts of local organizing committee members for the organization of this meeting are also commendable. I would

once again like to thank the host Centre of Excellence, KazNU; honourable Rector, Prof. Mutanov and Vice-Rector, Prof. Ramazanov and his dedicated team.

I wish you all meaningful and target-oriented deliberations during the next two days for achieving South-South and Triangular cooperation as one of the main objectives of COMSATS.

Thank you for your kind attention!

Message
of
H. E. Bolatbek Abdrassylov
Chairman of the Committee of Science of the Ministry
of Education and Science, Kazakhstan

Dear Honorable Executive Director COMSATS Dr. Syed Muhammed Junaid Zaidi!

Dear Honorable Chair of COMSATS Coordinating Council Dr. Ashraf Hamed Mousa Shaalan!

Dear participants of COMSATS Coordinating Council!

On behalf of the Committee of Science of the Ministry of Education of the Republic of Kazakhstan, I would like to greet all of the participants of the 21st Meeting of COMSATS Coordinating Council!

The main trend at the present stage of the world's development is globalization, which covers all spheres of human activities, including scientific and technological ones.

The development of cooperation with foreign states such as COMSATS member countries is an important direction of the scientific and technological policy of Kazakhstan, as a member of this authoritative organization.

It is heartening to watch the way the active cooperation of the leading university of Kazakhstan – al-Farabi Kazakh National University with the COMSATS Centers of Excellence gives scientists an opportunity to exchange experience and seek new ways to strengthen integration processes.

We are convinced that the decisions, worked out during the meeting of the Coordination Council of COMSATS will serve for the effective partnership of the universities and scientific organizations of Kazakhstan with COMSATS Centers of Excellence in the field of scientific and technological development.

I would like to wish all the participants of the 21st meeting of the Coordination Council effective and effective work for the benefit of sustainable development of human civilization

**Chairman of
the Committee of Science
of the Ministry of Education and Science
of the Republic of Kazakhstan**

Bolatbek Abdrassylov

Message
of
H. E. Murat Zhurinov
President of National Academy of Science,
Kazakhstan

Dear Honorable Executive Director COMSATS Dr. Syed Muhammed Junaid Zaidi!

Dear Honorable Chair of COMSATS Coordinating Council Dr. Ashraf Hamed Mousa Shaalan!

Dear participants of COMSATS Coordinating Council!

On behalf of the National Academy of Science of the Republic of Kazakhstan, I welcome all of the participants of the 21st Meeting of COMSATS Coordinating Council!

For 86 years National Academy of Science of the Republic of Kazakhstan that unites leading research institutes, contributes to the scientific and innovative development of the country in numerous ways, including the encouragement of international cooperation with the world's largest scientific organizations.

Scientists of Kazakhstan pursue joint international projects with researchers from other countries in the opportunity to undergo training in the leading research centers and access best equipment and data. More than a third of the research papers produced now have coauthors from multiple countries. International cooperation is becoming increasingly diverse geographically, with one of the priority areas of this expansion being the countries of the South, many of which are represented in COMSATS.

I am pleased to see that al-Farabi Kazakh National University, being the primary institution of higher education in Kazakhstan, is increasing action in our common commitment to international scientific and technical collaboration for the sake of sustainable development.

I am certain that al-Farabi KazNU working as the Center of Excellence, as well as being the host institution of the 21st Meeting of COMSATS Coordinating Council, could lend momentum to further enhancement of the partnership between scientific organizations of Kazakhstan and countries of the South.

I wish fruitful work and further strengthening of cooperation for sustainable development to all the participants and guests of the 21st Coordination Council!

**President of
The National Academy of Science
of the Republic of Kazakhstan,
Academician**

Murat Zhurinov

Annexure-III

Communiqué of the 21st Coordinating Council
Meeting

**COMMUNIQUÉ OF THE
21ST MEETING OF
COMSATS COORDINATING COUNCIL**

(3 – 4 April 2018, Almaty, Kazakhstan)

The participants of the 21st meeting of COMSATS Coordinating Council, including the representatives of fifteen Centres of Excellence, deliberated upon the fifteen-point agenda of the meeting during 3-4 April 2018, and are pleased to unanimously adopt the following statement:

1. The Coordinating Council pays gratitude to the Al-Farabi Kazakh National University (KazNU) for making excellent arrangements for the meeting and for providing warm hospitality to its participants. The administrative support of COMSATS Secretariat to KazNU for the successful organization of the meeting, including active correspondence with the invitees and preparation of necessary documentation, is appreciated.
2. The excellent and efficient moderation of the discussions during various technical sessions of the meeting by the Chairperson Coordinating Council, Prof. Dr. Ashraf Shaalan, President NRC, is commended.
3. The Coordinating Council is pleased to welcome the Tianjin Institute of Industrial Biotechnology (TIB), China, as a member of COMSATS' Network of Centres of Excellence. It is hoped that TIB will actively participate in the activities of the Network, play a vital role in the achievement of COMSATS' objectives as well as provide imperative support to Network members whenever and wherever required.
4. The Council appreciates the R&D and academic activities being undertaken by Centres of Excellence individually as well as collectively. The strong intent of the Centres of Excellence to collaborate with each other for executing joint research and development projects having social and economic impact is commendable. The Network members are encouraged to streamline their programmes in accordance with the Sustainable Development Goals (SDGs) as well as to engage in South-North-South Triangular Cooperation.
5. COMSATS Secretariat is encouraged to continue its efforts to extend the membership of COMSATS' Network to other states as well. The Council also advises COMSATS Secretariat to include state-of-the-art centres from the North and the South in the Network in order to upgrade those Centres that need support from the advanced Centres to become true Centres of Excellence.

6. The linkage of Coordinating Council with other organs including Consultative Committee and Technical Advisory Committee may be strengthened in order to facilitate the upgradation of Centres of Excellence as well as expansion of the programmes and activities of COMSATS' Network. In this regard, the international donor agencies may be approached for upgradation of labs and technical infrastructure of Centres of Excellence.
7. The Council encourages the establishment of new Centres of Excellence in the cutting-edge fields of science and technology for addressing national, regional and global challenges, with the support of international partner organizations and funding agencies.
8. The Centres of Excellence may benefit from the COMSATS Tele-health Programme for meeting the healthcare needs of the Member States.
9. The Lead Centres and collaborating institutions of ITRGs are encouraged to actively collaborate, share data, exchange expertise and laboratory resources, and build capacity in order to execute the joint research projects for the benefit of COMSATS' Member States. The ITRGs may also seek funding for this purpose from their respective Governments as well as international donor agencies.
10. The Belt and Road Initiative (BRI) of China is one of the largest infrastructure and investment mega-projects in history, involving 13 Member States of COMSATS. There are enormous opportunities of collaboration and funding under this Initiative. The Centres of Excellence are encouraged to capitalize on the opportunities available under this initiative for accelerating socio-economic development in the Member States.
11. The Council felicitates Dr. S. M. Junaid Zaidi, Executive Director COMSATS, on having been conferred upon the Al-Farabi Gold Medal for his outstanding contributions towards fostering international collaboration in science and technology.
12. The Council appreciates the efforts of COMSATS Secretariat to fulfil the objectives of the organization, and acknowledges the following achievements:
 - i. Initiatives taken by the new Executive Director of COMSATS for enhancing programmes and activities of the Organization as well as fostering regional and international cooperation;
 - ii. Steady growth of COMSATS flagship projects in Pakistan, i.e. the COMSATS Institute of Information Technology (CIIT) and COMSATS Internet Services (CIS);
 - iii. Continuous expansion of COMSATS Member States and Centres of Excellence;
 - iv. Organization of four (04) capacity building events in collaboration with Centres of Excellence and international partner organizations, which benefited various

- scientists, researchers, academicians, engineers and technicians belonging to Centres of Excellence and COMSATS Member States;
- v. Increased utilization of postgraduate scholarships at CIIT-Pakistan by COMSATS Member States;
 - vi. Exchange of resources and enhanced scientific collaboration among Centres of Excellence in various R&D domains;
 - vii. Networking with the institutions of the North for the mobilization of financial resources and technical support so as to meet the objectives of the Network;
 - viii. Regular publication of COMSATS' Annual Report, COMSATS' Newsletter, journal 'Science Vision' and other information material about the organization.

13. The Council encourages the Network members to make efforts for the following:

- i. Availing the opportunities of scholarships / fellowships available with COMSATS' Centres of Excellence;
- ii. Conducting capacity building events in accordance with the needs and demands of the scientific workforce of the Centres of Excellence and COMSATS Member States;
- iii. Sensitizing their respective governments regarding the benefits of regularly making AMC for the financial sustainability of COMSATS; and
- iv. Keeping COMSATS Headquarters abreast of the developments and achievements of their respective Centres

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