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English only

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**Committee on the Peaceful  
Uses of Outer Space**  
Fifty-sixth session  
Vienna, 12-21 June 2013

**Elaboration of the Terms of Reference for the Evaluation  
Mission to Assess the Capacity of Beihang University to  
Serve as a Host of a Regional Centre for Space Science and  
Technology Education**

**I. Introduction**

1. At the fiftieth session of the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space the Subcommittee welcomed a proposal by the Government of China to establish a regional centre for space science and technology education to be hosted by Beihang University in Beijing, under the United Nations Programme on Space Applications. The Subcommittee noted that the Office for Outer Space Affairs would facilitate an evaluation mission in that regard.<sup>1</sup>
2. In discharging its duty under the paragraph cited above, the Office for Outer Space Affairs extended an invitation to member States of the Committee to nominate a suitable expert to take part in a mission to evaluate Beihang University.<sup>2</sup> The purpose of the mission will be to provide a report on the capacity of Beihang University to serve as a host of a regional centre for space science and technology education.
3. The experts nominated by the member States will contribute to elaborating the terms of reference for the evaluation mission during the fifty-sixth session of the Committee on the Peaceful Uses of Outer Space.
4. This document has been prepared to provide essential background information for the elaboration of the terms of reference.

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<sup>1</sup> A/AC.105/1038, para. 45.

<sup>2</sup> OOSA/2013/4, CU 2013/83.



## II. History and Status of Regional Centres for Space Science and Technology Education

5. Between 1985 and 1989, the United Nations, through the Programme on Space Applications, organized three regional meetings and one international meeting on the subject of the development of indigenous capability in space science and technology at the local level. These meetings were held in Ahmedabad, India (1985), Mexico City, Mexico (1986), Lagos, Nigeria (1987) and Dundee, United Kingdom of Great Britain and Northern Ireland (1989). The participants at these meetings concluded that in order for the developing countries to effectively contribute to the solution of global, regional and national environmental and resource management problems, there was an urgent need for a higher level of knowledge and expertise in the relevant disciplines by educators as well as by research and application scientists in these countries. These capabilities, they further noted, could only be acquired through long-term intensive education.

6. On the basis of the above recommendations, the Office for Outer Space Affairs, under the United Nations Programme on Space Applications, prepared a proposal for the establishment of regional Centres for Space Science and Technology Education at existing institutions of research or higher education in the developing countries.<sup>3</sup>

7. In its resolution 45/72 of 11 December 1990 the United Nations General Assembly endorsed the recommendation of the Committee on the Peaceful Uses of Outer Space that “the United Nations should lead, with the active support of its specialized agencies and other international organizations, an international effort to establish regional Centres for Space Science and Technology Education in existing national/regional educational institutions in the developing countries”.

8. The activities that are expected to be conducted at the Centres for Space Science and Technology Education and the implementation plan for their establishment and operation, including detailed funding requirements, are outlined in document A/AC.105/534.

9. From 1992 to 1998 the Programme on Space Application undertook a series of evaluation missions to the countries that offered to host a centre in their respective regions in order to assess the viability of the potential host institutions and to conduct detailed analyses of these offers. After a careful study of each of the evaluation reports prepared by international groups of experts participating in the evaluation missions, host country and institution in each region have been identified as the most viable locations for the regional Centres.

10. As a result of these evaluation missions five Regional Centres for Space Science and Technology Education have been established in:

(a) India: Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP), inaugurated in 1995;

(b) Morocco: African Regional Centre for Space Science and Technology Education — in French Language (CRASTE-LF), inaugurated in 1998;

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<sup>3</sup> SAP/90/001-004.

(c) Nigeria: African Regional Centre for Space Science and Technology Education — in English Language (ARCSSTE-E), inaugurated in 1998;

(d) Mexico and Brazil: Regional Centre for Space Science and Technology Education for Latin America and the Caribbean (CRECTEALC), inaugurated in 2003;

(e) Jordan: Regional Centre for Space Science and Technology Education for Western Asia, inaugurated on 29 May 2012.

11. In 1995, the United Nations General Assembly, further endorsed the regional centres initiative and in its resolution 50/27 of 6 December 1995, recommended that “these centres be established on the basis of affiliation to the United Nations as early as possible and that such affiliation would provide the centres with the necessary recognition and would strengthen the possibilities of attracting donors and of establishing academic relationships with national and international space-related institutions”.

12. Information about the Regional Centres for Space Science and Technology Education is available from the UNOOSA website at [www.unoosa.org/oosa/en/SAP/centres/index.html](http://www.unoosa.org/oosa/en/SAP/centres/index.html).

13. The most recent reports on the status of the Regional Centres for Space Science and Technology Education were prepared for the fifty-second session of the Committee on the Peaceful Uses of Outer Space, held in 2009.<sup>4</sup>

### **III. Terms of Reference for the Evaluation Mission**

14. Annex V (a), (b) of document A/AC.105/534 contains the original proposal for terms of reference and agenda for evaluation missions for the selection of the host institution(s) for the Regional Centres. These terms of reference, replicated in Annex I to this document, assume a competitive selection procedure to select the most suitable from among several host country proposals received from within a region.

15. The terms of reference (evaluation parameters) used in the evaluation mission to Asia and the Pacific, conducted from 8 to 28 May 1994, are contained in Annex II to this document. It is proposed that they be considered as a basis for developing the terms of reference for the present evaluation mission.

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<sup>4</sup> A/AC.105/2009/CRP.13, Status report on the operation of the Regional Centres, 8 June 2009.

## Annex I

### Terms of Reference and Agenda for Evaluation Missions

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Annex V (a)

**CENTRES FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION**

**Terms of Reference for Evaluation Missions**

**Mission objective:**

The purpose of this mission (one mission to each regional Economic Commission) is to provide an accurate and informative report that could assist in the selection of the host institution(s) for the regional Centre. The report of the mission should contain sufficient indications of whether the governments and host institutions visited will provide the support necessary for the Centre's successful establishment and sustained operation.

**Duration of the mission:** 2-3 days for each country

**Starting date:** To be determined following confirmation of participation by potential donors.

**Pre-mission requirements:**

Prior to the commencement of the mission, members of the mission team should familiarize themselves with the contents of the project document, general background information on each country, and other relevant materials to be provided by the United Nations Office for Outer Space Affairs. On arrival in each country, the mission should visit the UNDP Resident Representative for appropriate briefings on the potential host country.

**Output of the mission and indication of the elements or items to be covered:**

**A. National level**

**A.1 Economic and social aspects**

1. The overall current economic and social situation of the country should be reviewed. Subsequently, the sectors related to the Centre (environment, science and technology, agriculture, natural resources and education) should be analyzed in terms of their socio-economic status and priority in the national development plan. The role of the Centre within these sectors should be discussed.

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2. The economic and social analysis should include a consideration of the present and future functions of the Centre and an analysis of the economic benefits such as employment or stimulation of other industries in the countries of the region.

#### A.2 Policy aspects

1. An analysis of the policy aspects should focus on the policies of the potential host institution or country which may affect the feasibility of the Centre. Specifically, such an analysis should address legislative, institutional and administrative measures needed for the successful establishment and operation of the Centre.

2. In consideration of the multinational characteristics and regional functions of the Centre, the Government's foreign policy toward other countries, particularly within the region, a situation which might affect the ultimate feasibility of the project, should be taken into account.

3. The relevant sector policy papers which are included in the national development plan should be studied in order to analyze the host country's strategies in these areas. (Background papers will be obtained and circulated to all members of the mission before the visit).

#### B. Institution Level

##### B.1 Financial aspects

1. The necessary financial information on the host institution should be obtained; this should include annual capital budget, operating budget and annual revenues, sources of financing and general conditions governing availability of funds from sources of finance.

2. Furthermore, the financial support that the host institution is capable of providing for the sustained operation of the Centre will be analyzed and discussed, taking into account the expected development of the Centre.

3. In-kind support; the mission should determine the availability of in-kind support for the establishment and sustained operation of the Centre.

##### B.2 Professional and technical aspects

1. The mission should obtain detailed information on the professional and technical background and characteristics of the host institution, including the type and scope of academic programmes, academic level of teaching staff, their accumulated experience in remote sensing education, professional background of

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the technical supporting staff, specifications of equipment available, communication facilities and layout of buildings and other infra-structure, etc.

2. The availability of space-related facilities, equipment and technical support necessary for, or complementary to the operation of the Centre will be evaluated in accordance with the requirements described in the project document (SAP/90/001-004).

**B.3 Managerial aspects**

The mission should address the administrative and financial management issues of the Centre, and the relationship that should evolve between the host institution and the Centre. The degree of autonomy of the Centre should be fully addressed.

**B.4 Organizational aspects**

The mission should also focus attention on the internal administrative structure of the host institution. The analysis of the latter should cover such questions as organizational set-up, the expediency with which the Centre would be able to conduct its day-to-day operations, its relationship to relevant ministries or other collaborating agencies, lines of command and delegation of authority.

**B.5 Operational aspects**

The mission should obtain detailed information on the local availability and adequacy of such elements as materials (consumables and non-consumables), utilities, labour and services.

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Annex V (b)

Centre for Space Science and Technology Education

EVALUATION MISSION

Agenda

1. Introductory presentation by the mission on the concept of the Centre; this would be followed by the views of the local authorities and a general discussion.
2. Visit to the facilities proposed to house the Centre as well as those to be used by the Centre.
3. Detailed discussions on the issues that follow,
  - (a) Institutional support
    - (i) The commitments that would be made and agreements that could be entered into, regarding the physical areas, equipment and furnishings that would be provided for the Centre; these would include both those for exclusive use of the Centre and those to which the Centre would have access in conducting its activities;
    - (ii) The professional and technical support that could be provided or available in support of the educational activities of the Centre. This would include the possibilities of local visiting professors and technical support for the operation and maintenance of laboratory and computing equipment;
    - (iii) Budgetary support for the Centre including its source(s) and possible mechanisms for its allocation and exercise; and
    - (iv) Hospitality, counselling and other support to be provided for participants, foreign staff and visiting professors.
  - (b) Governmental support
    - (i) Facilities for foreign staff and visiting professors to legally work in the Centre;
    - (ii) Facilities for visas for participants in the education programme;
    - (iii) Facilities to import equipment, supplies and consumable materials that may be necessary for the establishment and operation of the Centre; and

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- (iv) Budgetary support for the Centre including its source(s) and possible mechanisms for its allocation and exercise.
- (c) Establishment of the Centre; funding and legal structure
- (i) Character and legal status of the Centre;
  - (ii) Creation of a trust fund to receive and administer the funds for the establishment of the Centre;
  - (iii) Mechanism for transfer of funds and authority to the Centre for its eventual autonomous administrative functioning;
  - (iv) Establishment of Governing and Advisory Boards for the Centre;
  - (v) Discussion of appropriate salary levels for the staff and visiting professors of the Centre in order to determine an approximate operating budget for the Centre;
  - (vi) Possible funding sources for the establishment and operation of the Centre (local, regional, potential donors and international organizations).
- (d) Practical matters
- (i) Availability and range of rents for one- to three-bedroom housing for foreign staff and visiting professors;
  - (ii) Local availability of equipment, supplies and repair and maintenance services.

The above proposal by the United Nations is an open agenda containing the issues that the mission would highlight. It is intended that this proposal serve as guide for the potential host Governments and institutions in preparation for the visit of the mission and the subsequent discussions. The specific schedule of visits, interviews with various authorities and schedule of discussion meetings would be prepared by the local authorities.

The work of the mission in each country should begin and end with a meeting that would be attended by representatives of all entities which could play a role in the establishment of the Centre in the country being visited. In a similar spirit, the mission will be prepared to include in its discussions other issues that may be proposed by the local authorities in connection with the establishment of the Centre.

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## Annex II

### Evaluation Parameters for the Selection of the Regional Centre for Space Science and Technology Education in Asia and the Pacific

#### A. General Remarks

The following section presents the mission's evaluation of the current or expected condition for each of the parameters considered; the list of these parameters is shown below. For each of the countries visited, the level to which the offer would meet with the perceived needs of the Centre is given as one of three categories (i) Offered or Satisfactory (OS); (ii) Probably Satisfactory (PS); or (iii) Not Offered, Unsatisfactory or Unavailable (N) for each of the parameters and criteria identified below.

The evaluation scale is described in more detail as follows:

**Offered or Satisfactory (OS):** This means that the mission members are confident that the facilities, manpower or other needs of the Centre will be fulfilled by the proposed offer, even though these may not be currently available. Where appropriate it means that statements of support or in-country conditions and infrastructure are considered satisfactory.

**Probably Satisfactory (PS):** This means that the mission members are reasonably sure that the Centre's perceived needs will be satisfied by the offers or statements, but that existing facilities may need upgrading, that the proposal has not completely addressed all of the Centre's needs, or that formal approval of a particular part of the offer is expected but has not yet been given.

**Not Offered, Unsatisfactory or Unavailable (N):** This means that (i) the mission members believed that what was offered would not satisfy the needs of the Centre and that there was very little chance that a satisfactory upgrade could take place; (ii) the statements of offer did not have sufficient formal approval and had little likelihood of gaining that approval in the immediate future; (iii) no offer was made regarding particular facilities or requirements; or (iv) such facilities or requirements were not available and had very little chance of coming to fruition.

#### B. Evaluation Parameters

1. Governmental Support
  - 1.1 Level or rank of the government representative
  - 1.2 Contents of the statements and scope of the support offered
2. Institutional Support
  - 2.1 Level or rank of the representative of the potential host institutions for the Centre
  - 2.2 Contents of the statements and scope of the support offered

3. Local resources in support of the Centre
  - 3.1 Scientific, technical and administrative personnel offered for the Centre (potentially available to the Centre in (i) participating institutions and (ii) in national institutions)
  - 3.2 Infrastructure
    - 3.2.1 Installed facilities (libraries, equipped laboratories, non-dedicated major equipment, telephone communications networks, interpretation/translation services)
    - 3.2.2 Campus (distance to the future location of the Centre)
    - 3.2.3 Physical spaces (total available surface, classrooms, work and study rooms and offices properly furnished)
  - 3.3 Support equipment (main frame computers, minicomputers, workstations, personal computers, plotters, printers and other electronic or specialized equipment)
  - 3.4 Software (commercial or in-house developed software packages) for digital image processing and data analysis.
4. Housing for participants and staff of the Centre

Availability and adequacy; either on-campus, offered for the Centre or commercially available at reasonable rates
5. Coordination of the Centre's activities
  - 5.1 Coordination of the education programmes (structure proposed by the host country)
  - 5.2 Coordination among the participating institutions
6. Autonomy of the Centre
  - 6.1 Degree of academic autonomy
  - 6.2 Degree of administrative autonomy
7. Financial contribution
8. Degree to which the proposed structure has been developed
9. Legal status of the Centre
10. Experience of the host country/site in application areas of remote sensing
11. Experience in space technology
  - 11.1 Involvement in hardware or software development
  - 11.2 Availability of receiving stations
  - 11.3 Access to relevant data distribution networks
12. Demand for experts and services from a space science and technology education centre
  - 12.1 Demand for experts in operational programmes of the region

- 12.2 Demand for services/consultancy from the Centre
- 13. Geographic situation, practical aspects
  - 13.1 Geographic situation within Asia
  - 13.2 Infrastructure access links in the region
  - 13.3 Political links, participation in regional academic exchange, presence of students from other Asian countries

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### **General Considerations in the Evaluation of the Parameters**

With reference to governmental and institutional support, the mission took note of the level at which the Centre had been approved within the corresponding institutions. At the same time, the mission noted whether there was a coordinated effort among the institutions that were indicated as participating or contributing back-up support for the Centre.

With reference to local scientific and technical personnel, the mission noted the numbers (depth) of persons and the range of (i) remote sensing and satellite meteorology related disciplines and (ii) space-related disciplines, that were covered by those individuals. Due to the diversity of languages in the region and bearing in mind that the working language of the Centre will be English, the mission also noted whether the language of education and of the scientific community was predominantly English, a combination of English and the local language or predominantly English.

With reference to installed facilities, in particular large or complex ones, the mission noted whether they were functional, asked if they would be made available on a dedicated or shared basis and estimated whether these facilities were indeed sufficient to accommodate an additional number of users through a schedule. The mission believes that the Centre should acquire small equipment (personal computers, printers, etc.) from its own budget since few or none of the institutions would have sufficient extra equipment to satisfy its needs. Maintenance servicing will be easier and at a lower cost if the equipment is new and homogeneous. In addition, the cost of these equipment is relatively low while the technology available (for a fixed cost) continues to improve.

The mission considered that when housing was not provided by the offer of the potential host country, it could be found commercially available although this would increase the expenses of the Centre.

The mission considers that the academic and administrative autonomy that would be offered to the Centre is critical to its establishment, growth and acceptability by the region and by the international community. In this respect, the mission placed close attention to indications that either the government or the host institutions might restrict these autonomies. The views of the mission are found in the body of the report and in the section of observations and conclusions.

The financial contributions offered for the establishment and operation of the Centre have been verified with the authorities in each country. These contributions have been reflected in United States dollars for a period of four years with indications, where appropriate, of funding offered for a fifth year. The financial contribution of India was not quantified since it offered to defray the expenses necessary for the Centre. The estimated cost for establishing and operating the Centre, as reflected in document A/AC.105/534, is US\$ 1.3 million/year.

The degree to which the proposed structure for the Centre has been developed was considered important as an indication of how thoroughly the potential host has developed the vision of what the Centre could be and identified the elements it would need to bring together to make it happen. The proposed structure would also address the type of legal structure, including the privileges that can assist the establishment of the Centre.

The experience of the host country in remote sensing in particular, and in space technology in general are indicative of the in-country support that will be potentially available to the Centre as well as of a scientific and technical environment with which to interact. Participants in the Centre's programme would be exposed to development of hardware and software if this was part of the host institution's experience.

It is anticipated that once established, the Centre could generate some of its own funding through the provision of consulting services. Thus, the mission asked whether this was seen as a desirable and feasible possibility by each of the potential host institutions.