

SMTP

SPECTRUM MANAGEMENT TRAINING

SMTP

SPECTRUM MANAGEMENT TRAINING PROGRAMME

AN ITU ACADEMY INITIATIVE



<http://academy.itu.int>



The image shows the International Telecommunication Union (ITU) logo, which is a blue globe with a red lightning bolt through it. Overlaid on the globe is a sequence of binary digits (0s and 1s) arranged in a grid pattern.

ITU Academy

presents

SPECTRUM MANAGEMENT TRAINING PROGRAMME



0:38 / 12:50 • 720p

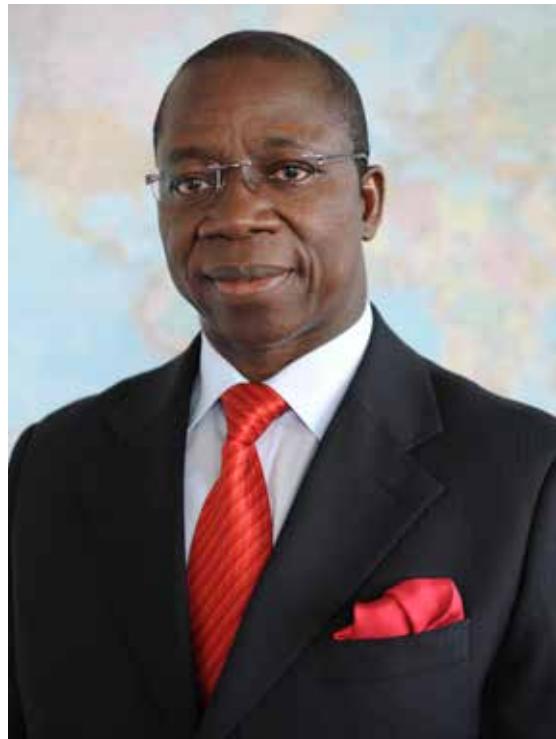


I am delighted to inform you that ITU, through its ITU Academy, is embarking on the development of a Spectrum Management Training Programme (SMTP). This programme will be the first in a series of educational products to be provided under the ITU Academy, guided by the needs and priorities of the ITU membership.

Today wireless technology drives the development of information, communication services, education and capacity building among others. However, the rapid evolution of wireless services depends on one crucial asset – the radio spectrum. At the same time, there are limited Spectrum Management educational programmes currently available on the market. Thus, ITU in collaboration with Academia, subject matter experts, and other stakeholders, is pleased to announce the commencement of the SMTP, a new ITU training solution in the domain of Spectrum Management.

It is with great pleasure that I invite all stakeholders to join ITU in the development of this Programme.

Brahima Sanou
Director, Telecommunication Development Bureau (ITU-D)





S P E C T

SMP

RUM MANAGEMENT TRAINING PROGRAMME

THE CONTEXT

The tools of the trade in the field of Spectrum Management are expanding constantly and now encompass anything from traditional electromagnetic compatibility formulas to the theory and practice of real-time spectrum auctions. Such broad and varied professional requirements contrast strongly with the knowledge base of the typical graduate from a university or technical college. Even graduates who majored in telecommunications engineering have a limited understanding of real-world spectrum use, not to mention how it is administered. Spectrum managers must consequently possess both specialized technical skills and a clear understanding of legal and economic issues. Thus, the need for additional specialized training in Spectrum Management is quite obvious.

Today, national radio spectrum agencies and wireless operators that require professional spectrum managers have no choice but to train new recruits on the job, often simply through the "follow-me" examples of more experienced colleagues, complemented by participation in occasional ad hoc seminars and short courses. While this approach can work in large organizations with many employees and a wealth of accumulated experience, it still takes a long time to reach the desired level of performance and, too often, the results are an institutionally-biased perspective on the issues. In younger and smaller organizations, such as regulatory agencies in many developing countries, opportunities for acquiring the necessary qualifications are limited or non-existent.



Spectrum agencies and wireless operators often train new recruits on the job simply through the “follow-me” examples of more experienced colleagues

THE CONCEPT

The ITU Academy was created to respond to the demand for knowledge and skills in Information and Communications Technology (ICT) **training, teaching and research**. In particular, it was established to offer a wide and growing range of general and specialized courses on all aspects of telecommunications/ICT in Radiocommunication, Telecommunication Standardization and Telecommunication Development.

To fulfill this goal, the ITU Academy is embarking on the development of the SMTP, a new ITU training solution in the domain of Spectrum Management.



The SMTP will consist of a set of **high level training materials** in all areas of Spectrum Management, which will be developed by experts drawn from within and outside ITU. The new programme will cover a full range of topics with an ultimate aim to have formal evaluation and attainment certification at completion. Such a programme would be a novel undertaking by ITU to offer its members a solid means for staff **training in the theory and practice of modern Spectrum Management**. The SMTP will establish itself as the **global “golden standard”** for Spectrum Management training. It will complement the existing ad hoc professional spectrum management training options and promote the harmonization of spectrum management practices.





To provide countries with capacity
building solutions to meet their
learning and developing needs
in **Spectrum Management**

01

PROGRAMME OBJECTIVES



To provide access to the latest learning tools, in order to create an inclusive information society able to capitalize on innovative technologies

02

To build human and institutional capacity by designing and making available high-quality telecommunications/ICT training courses, materials and related resources in Spectrum Management

03



TARGET AUDIENCE

The SMTP will be designed for Member States and Sector Members of ITU. In particular, it will serve the capacity building needs of operators, regulators and policymakers. It will also be a resource pool for members of the Academia and ITU Centres of Excellence (CoEs) network. However, beyond these target groups, the SMTP will also be available to anyone who would like to enhance and broaden their professional knowledge while working in the field of Spectrum Management.

As such, students entering the SMTP may be from different institutional levels, from technical to managerial, and with different backgrounds (engineering, legal, economic, etc.).



SMTP



ITU CENTRES
OF EXCELLENCE



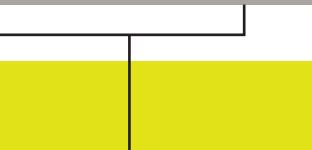
ACADEMIA



ITU ACADEMY

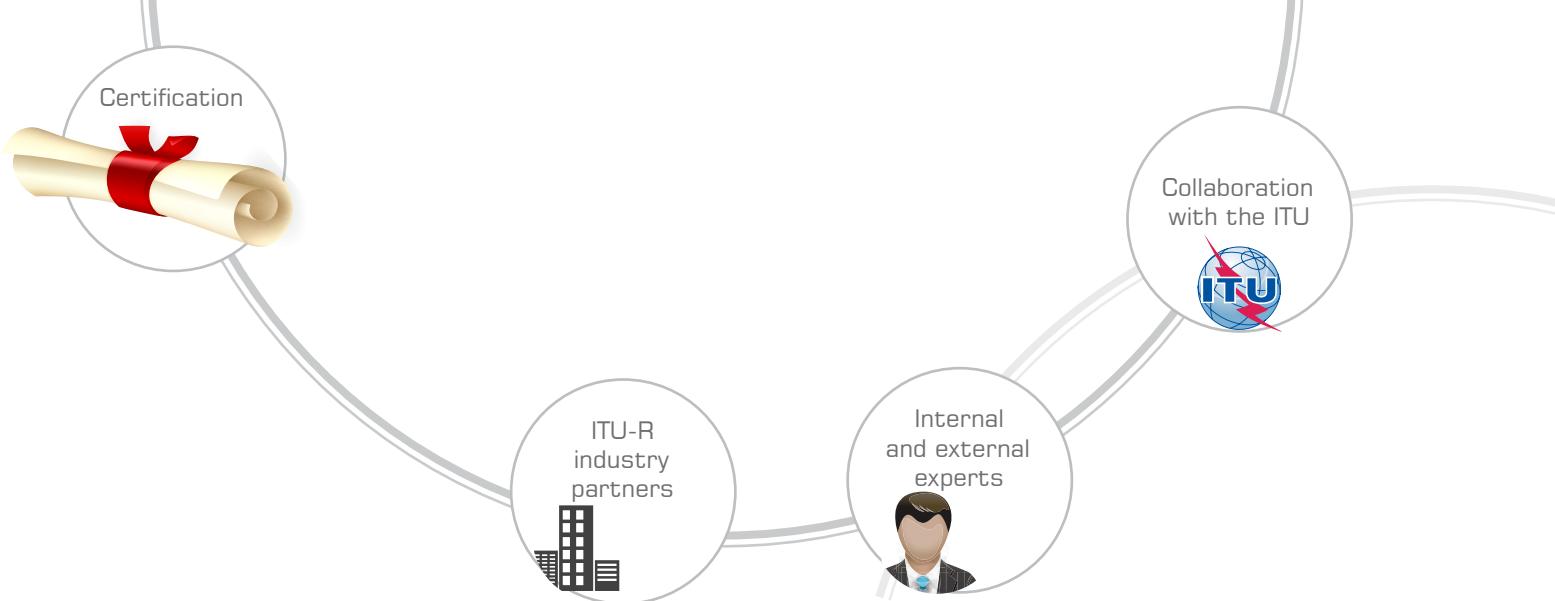


MEMBER STATES AND SECTOR MEMBERS
(OPERATORS, REGULATORS AND POLICYMAKERS)



STUDENTS

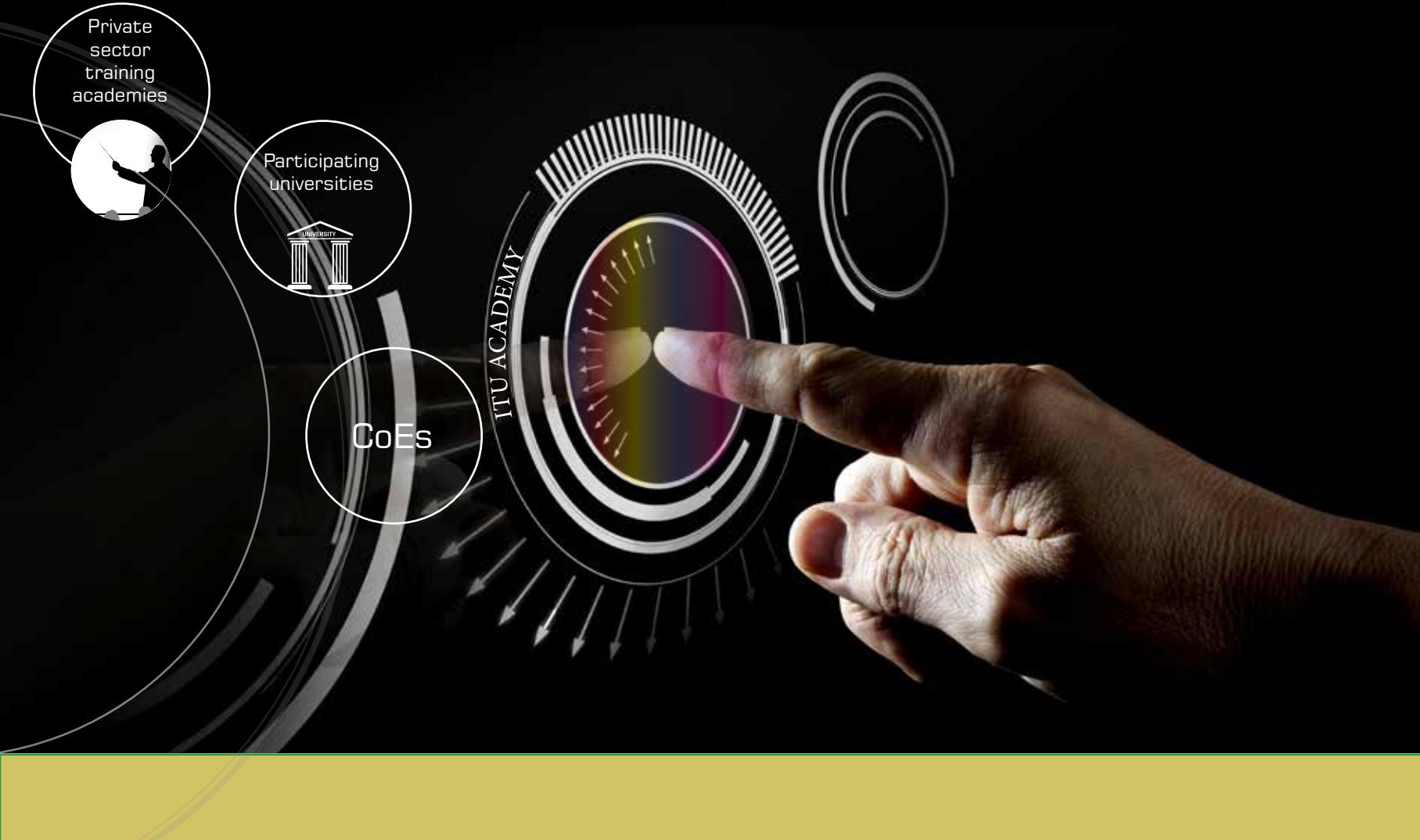
DELIVERY MECHANISM

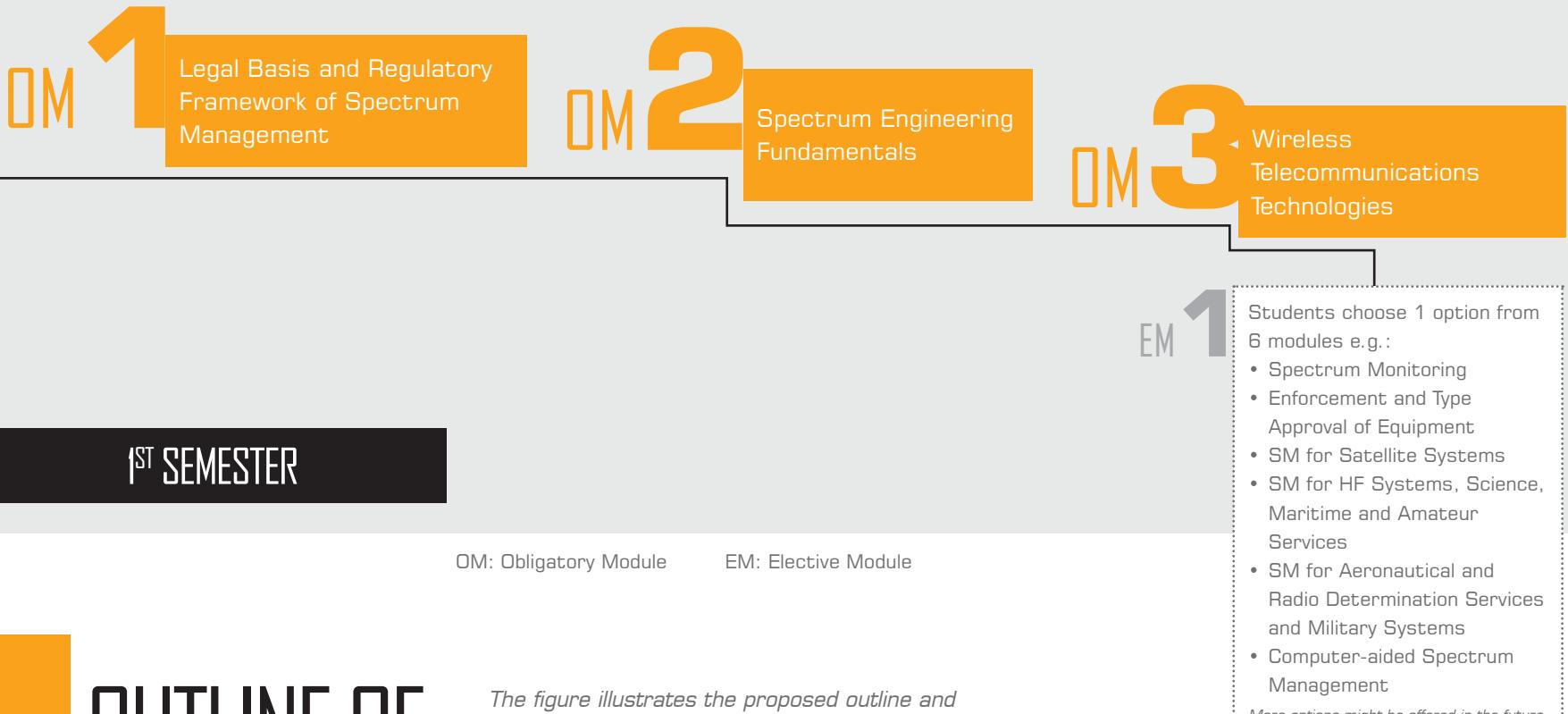


The ultimate aim is to produce the SMTP as an international certified programme. The SMTP can be delivered through the ITU e-learning platform, the ITU Academy, as well as through a consortium of CoEs. The CoEs have been established in all regions and under the umbrella of the ITU Academy, and are connected into one global network sharing training curricula, resources and expertise. The high level materials can also be delivered through

various channels such as participating universities or private sector training academies. However, this training will have to be organized in collaboration with ITU, internal and external experts and ITU-R industry partners, especially for practice and laboratory exercises, under the aegis of the ITU Academy. Successful graduates could be awarded a university Masters diploma in case of delivery through a partner university.

GLOBAL NETWORK SHARING TRAINING CURRICULA, RESOURCES AND EXPERTISE





OUTLINE OF THE SMTP

The figure illustrates the proposed outline and modular structure of the SMTP, with tentative subject indication.

2ND SEMESTER

OM 4

Economic and Market Tools
of Spectrum Management

OM 5

Strategic Planning and
Policies for Wireless
Innovation

EM 2

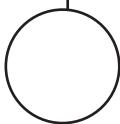
Students choose 2 options from
4 modules:

- Advanced Spectrum
Authorization Regimes
- Terrestrial TV Broadcasting
Planning and Digital Transition
- Socio-economic Impact
of Spectrum Regulation;
Competition and Consumer
Protection
- Opportunistic Spectrum Access
and Cognitive Radio

More options might be offered in the future

3RD SEMESTER

Optional Master Thesis
in case of pursuing MSc
academic diploma



Possibility of
Advanced entry
point subject to
test

GUIDELINES FOR TEACHERS:



Power Point
slides to fill
30 hours of
lecturing per
module



20 slides per
lecture
with a total of
600 slides per
module



10 hours
of tasks for
practical
exercises /
lab (where
applicable) per
module



Exam questions
for testing
(50-100
questions)

GUIDELINES FOR STUDENTS:



125 hours
per module,
40 hours of
classroom
training



4-5 weeks
– module
duration



All modules
can be
completed in
no more than
1 year



60-90
European Credit
Transfer and
accumulation
System (ECTS)
credits for the
whole SMTP



Combination
of face-to-
face sessions,
remote
teaching and
self-studies



Formal
assessment at
the end of each
module



THE DEVELOPMENT OF DELIVERABLE MATERIALS WILL PASS THROUGH SEVERAL STAGES:



WORKING MECHANISM

CONTENT DEVELOPMENT

The Programme development requires high level professionals in the sphere of Spectrum Management. Thus, ITU invites experts, academic institutions, companies and other stakeholders to participate in the content development of the SMTP. It will give an opportunity to select the best Spectrum Management practices and to create top quality training materials.





SMTP DELIVERY OPTIONS

The SMTP delivery aims to exploit as efficiently as possible, a combination of different delivery modes tailored to the specifics of each module (theoretical vs. practice oriented) and the needs of professionally active students. For example, the time allocated to a module might be spread among:

- distance learning through the ITU Academy e-Learning platform;
- classroom teaching and face-to-face seminars and workshops;



- practical exercises whenever possible (e.g. with monitoring equipment, software tools);
- instructor-led remote (live or prerecorded streamed audiovisual) lectures;
- self-study of textbooks and reference material;
- interactive seminars and discussions with tutors and peers using web tool.

Classroom instruction could be coordinated by the ITU Academy and carried out at ITU CoEs or at other partner institutions such as universities.

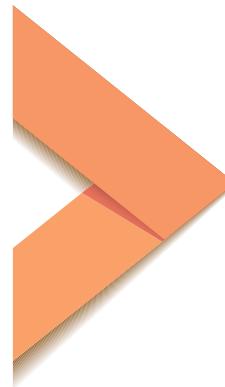
QUALITY ASSURANCE

The ITU Academy pays utmost attention to the issue of quality of the SMTP. This is why the ITU Academy supervises the full process of the SMTP, from content development to its final delivery. To that end, the following mechanisms are foreseen to ensure the quality of both the curriculum as well as the actual teaching materials.

01

► The developed curriculum/syllabus for each module and the teaching material shall be rigorously examined via a comprehensive **Peer Review Process**:

- cross-review by members of the team working on the development of the content – the “four eyes” principle;
- review by invited experts in relevant subject fields from ITU bureaus as well as relevant Study Groups.



Ultimately, the quality of the SMTP delivery will be constantly monitored by collecting regular feedback from tutors and students as well as their employers on the perceived value of the obtained knowledge and professional skills.

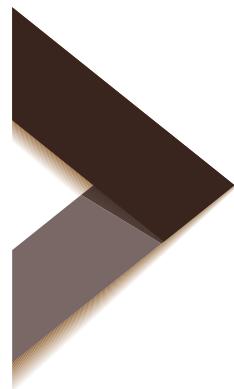
02

- Peer reviewed material shall be subject to ultimate **review and approval by the ITU Editorial Committee.**



03

- The teaching material **will be further reviewed by the universities and other partner organizations** participating in the delivery of the SMTP, to ensure compliance with their adopted (national) standards of academy quality.



EVALUA- TION

Formalized assessment of learning outcomes, as well as the professional knowledge and skills attained, will be a critical element of the SMTP. Therefore, each study module will have an associated examination procedure. This could be in the form of a set of questions to be answered, problems to be solved, analyses to be written, or practical tasks to be carried out. At the end of the Programme, there will be a final evaluation as follows:

- in case of university-affiliated SMTP delivery, the final evaluation will take the form of a Master thesis defense, during which students should demonstrate the overall proficiency with the subject of Spectrum Management and deep understanding of the chosen professional specialization;
- in case of the SMTP delivered as a professional certification programme, the final evaluation will be done through aggregation of grades received for individual modules.

A Quality Review and Examination Board, made of prominent Spectrum Management experts, will be established and be responsible for reviewing the feed-back from all participants in the SMTP, recommending adjustments to content and delivery options, as well as vetting and supervising the examination processes, as appropriate.

EVALUATION

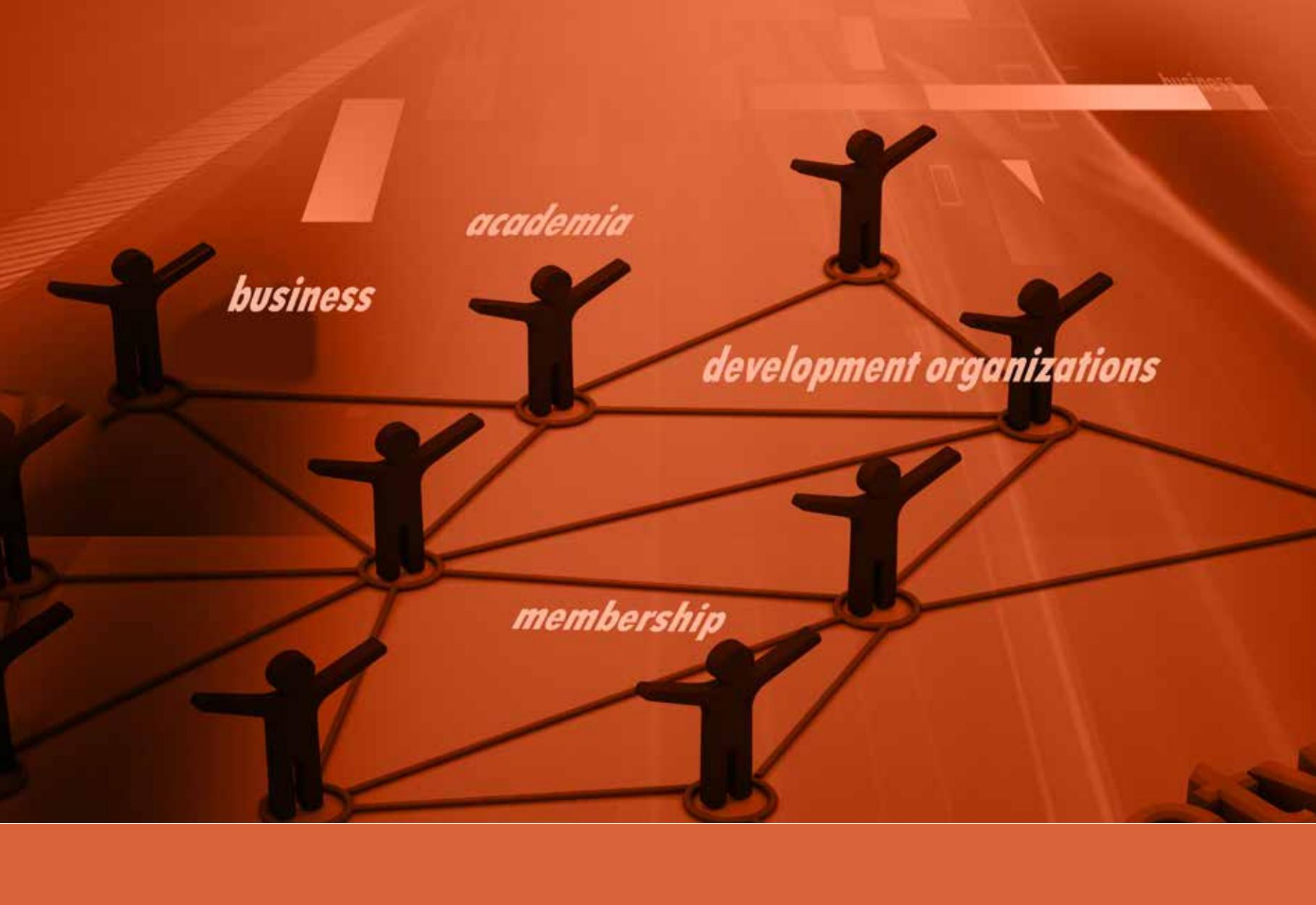
- Outstanding
- Very Good
- Satisfactory
- Marginal
- Unsatisfactory

PARTNERSHIP IN SMTP DEVELOPMENT AND DELIVERY

The ITU Academy will become a coordinating point for developing and then implementing the SMTP. However, it would need to draw in skilled partners to prepare and keep up-to-date the teaching content, decide how and what to test for in the certification procedure, and eventually to organize effective delivery of the Programme. The ITU Academy, therefore, seeks to actively engage multiple stakeholders, such as:

- ITU bureaus (BDT, BR and TSB), as well as ITU-R and ITU-D Study Groups;
- universities and organizations participating in running the ITU CoEs in various regions;
- national regulatory authorities (NRAs), especially those who already have their national SM training programmes;
- companies and associations prominent in the field of wireless communication and Spectrum Management.

Those organizations who may be interested in cooperating with the ITU Academy on developing and delivering the SMTP are welcome to contact the coordinating entity – BDT, Human Capacity Building division within the Project Support and Knowledge Management Department.



ITU Academy



“The illiterate of the future will not be the person who cannot read.

It will be the person who does not know how to learn”

Alvin Toffler

For further information, please contact:

Human Capacity Building Division

E-mail: hcbmail@itu.int



<http://academy.itu.int>

International Telecommunication Union

Place des Nations

CH-1211 Geneva 20

Switzerland