Outline draft regarding the
"European guidelines for the certification of the medical sleep specialist / clinical somnologist"

The aim of this paper is to introduce a qualification in sleep medicine for medical specialists. Cerfication for non-medical sleep professionals is addressed in a separate paper. The certification is a voluntary proof of further education/training in the scientific/clinical area of sleep medicine and sleep research or "somnology".

The qualification is initiated by the Board of the National Sleep Society (NSS). Whenever possible, this qualification should be endorsed by the Medical Faculty of the Universities or other authorities (government, chamber of physicians) involved in the educational programme. Applications for certification must be filed to the authority responsible for the educational programme.

The qualification confirms the successful education in the science, practical clinical work and experience in the area of sleep medicine and research. The practical training for the certificate must have taken place in an accredited Sleep Medicine Centre (SMC).

1. Object

The certificate intends to show that the named person is able to carry out the diagnosis and differential diagnosis of sleep-related problems and their management.

2. Scope of sleep medicine

The scope of education in sleep medicine includes epidemiology, aetiology, (patho)physiology, diagnosis and differential diagnosis of the disturbances of sleep and wakefulness. The mastering of sleep medicine includes knowledge of the essential diagnostic methods, examination techniques, research methodology, as well as specific therapeutic measures.

3. Qualification procedure

3.1. Prerequisites for attending the examination procedure

1) The candidate must be qualified as a medical doctor
2) Applicants who completed medical specialization must spend a period of 12 months of full time clinical work with full responsibilities in an accredited SMC. If training in sleep medicine has been offered during the foregoing medical specialization, this period may be reduced to no less than 6 months, depending on the degree of exposure.
3) "Grandfathering" for a limited transition period is allowed for accreditation of SMCs to be arranged, for teaching programmes to be developed and for teaching faculty to be appointed.

3.2. Application for entry into the sleep medicine examination

To apply, the candidate must show proof to the relevant authority that the entry requirements described above have been fulfilled.

3.3 Certification Committee

Unless a certification programme is already operational and organized by university or government officials, the NSS may take responsibility for this process. For this purpose, it is suggested that the NSS set up a Certification Committee, consisting of 3 members appointed for 2 years. The application of the candidates is examined by this committee, with respect to the fulfilment of all requirements. The committee also selects the the names of the examiners and the place for the examination.
The Certification Committee is composed of a chairman and 2 additional members, one of which should be a neurologist / psychiatrist and another an internist / pneumologist. The Board of the NSS decides who will act as chairman of the Certification Committee.

3.4 Procedure for examination

It consists of a practical-clinical and a theoretical part.

1. Practical-clinical part: adequate knowledge of the use of sleep medicine diagnostic and therapeutic tools are to be demonstrated.
2. Theoretical part: knowledge should be demonstrated covering all relevant areas of sleep medicine.

3.5 Protocol

Written notes of the examination and its outcome must be archived and can be reviewed by the applicant.

3.6 Repeating the examination procedure

The examination can be repeated if candidates are unsuccessful. The Board of the NSS will decide on the necessary prerequisites.

3.7 Appeal

The candidate can appeal against the decision made by the Board of the NSS within 4 weeks.

3.8 Certificate

A certificate will be issued by the NSS or the authorized body to candidates who successfully completed the examination.

Appendix 1. Index of preceding practical experience

a) Independent technical performance of a full polysomnography (PSG) procedure according to R&K in 30 patients.
   Independent reading of 100 PSGs according to R&K, including 50 cardio-respiratory PSGs with evaluation and assessment of sleep related respiratory and circulatory disturbances.
b) independent performance of a full MSLT/MWT[1] procedure in 10 patients
c) treatment experience in 100 patients with sleep/wake disturbances. This should include cases of each of the following diagnoses: sleep related respiratory disturbances (including nasal ventilation therapy), other intrinsic dyssomnias, parasomnias, and sleep disturbances due to physical and psychiatric disorders

[1] MSLT: Multiple Sleep Latency Test; MWT: Maintenance of Wakefulness Test

Appendix 2. Index of theoretical knowledge

The candidate applying for the "Somnology" qualification must demonstrate knowledge of the following sleep medicine contents.

2.1 EEG and physiological bases of sleep

Candidates should demonstrate knowledge of:

- physiological and age-related variations of sleep/vigilance during the day, examination and evaluation of vigilance disturbances, physiological variations, age related variations.
- physiological and biochemical changes in sleep.
- models of sleep ontology and function.
- EEG activity during sleep, staging of sleep.
- Effectiveness and limitations of the conventional sleep staging classification.
- REM and NREM sleep
    - EEG activity.
    - Motor-neural activity.
    - Sensory activity.
    - Activity of the autonomic sympathetic/ parasympathetic nervous system.
    - Heart/circulatory functions.
    - Respiratory functions.
    - Metabolic activity.
    - Thermoregulation.
- Regulation of hormones during sleep and their dependence on sleep stages.
- Basic knowledge of mental activity during sleep including dreams.

2.2 Chronobiological aspects of sleep

The candidate should have knowledge concerning:

- Circadian rhythm and its influence on temperature and heart/circulatory and hormone activity.
- Chronobiological models of sleep regulation.
- Circadian variation of efficiency and concentration.
- Tiredness and sleepiness during the day.
- Methods for recording daytime dependent variations of sleepiness and efficiency.
- Diagnostic procedure of circadian variation and physiological variables.
- Sleep disturbances due to disrupted sleep-wake rhythm and their classification and differential diagnoses.
- Therapeutic non-medical management of circadian rhythm disorders and pharmacological therapy.

2.3 Diagnostic procedures for identification and assessment of sleep disturbances in adults

The candidate should have extensive knowledge of:

- Outpatient diagnostic procedures for insomnia
- Sleep related respiratory disturbances.
- Sleep related circulatory disturbances.
- Outpatient methods for identifying and assessing disturbances of vigilance
- Knowledge of established and validated questionnaires for assessing sleep disturbances.
- Diagnostic procedures:
    - PSG.
    - Cardio-respiratory polygraphy.
    - MSLT and MWT.
    - Rating scales and neuropsychological tests.
- Personnel, technical and logistical prerequisites for running a sleep-lab (cf. European Guidelines for the Accreditation of Sleep Medicine Centres).

2.4) (Differential) diagnosis of sleep disorders as listed in ICSD-2

The candidate should have special knowledge of:

- Differential diagnosis and classification of sleep disturbances, daytime sleepiness and tiredness. In particular, the candidate has to be able to recognise the symptoms, differential diagnosis and prognosis of the following disorders and must be able to independently draw up therapeutic programs.
    - Insomnia.
    - Sleep apnea syndromes and other sleep-related breathing disorders
    - Hypersomnia and disturbances with daytime sleepiness.
    - Narcolepsy.
    - Parasomnias.
    - Sleep disturbances in: psychiatric, neurological, internal, cardio-respiratory, skeletal, abuse of drugs, alcohol, medication, paediatric disorders, medication side effects and disturbances of the circadian rhythm.

2.5) Therapy of sleep disturbances

The candidate should have extensive knowledge of indication, methods and application of:

- Sleep hygiene.
- Influence of medication on normal sleep.
- Drug therapy for disturbed sleep and light therapy.
- Cognitive behavioural therapy and other psychotherapeutic procedures for sleep disturbances.
- nasal CPAP and other aspects of non-invasive ventilation
- surgery
- dental appliances

Appendix 3. Standardization of teaching programmes and examination

Efforts for standardization at a European level should be made regarding:

- theoretical aspects of education
- practical aspects of education
- examination

However, this requires further consultation of all NSS involved in this matter