THE INTERNATIONAL ATOMIC TIME, DEFINITION, REALIZATION (*)

B. Guinot
Bureau International des Poids et Mesures
Pavillon de Breteuil, F-92310 SEVRES
France

ABSTRACT. The International Atomic Time TAI is a realized time scale which is ultimately used for comparisons between the observations and dynamical theories. Its definition should tell us unambiguously what an ideal TAI should be. It is also important know the uncertainties of the implementation of this definition.

Concerning the definition, there is an apparent divergence between the physicists for whom TAI is a coordinate-time and the astronomers who often consider it as a proper time. This matter should be clarified and it might be advisable that IAU adopts a recommendation on this topic, based on the already existing CCDS and CCIR definitions, but completed for the specific uses in astronomy. The present TAI definition refers to the geoid. Some years will elapse before the tidal effects be observable. Nevertheless, it is desirable to have some exchanges of views on an improved definition.

The accuracy (conformity with the definition), stability and precision of reading of TAI are progressively improving. Present and past properties will be briefly reported.

The complete paper has been submitted for publication to "Celestial Mechanics".

(*) This paper was not formally presented during the symposium because the author was unable to attend due to visa problems.

J. Kovalevsky and V. A. Brumberg (eds.), Relativity in Celestial Mechanics and Astrometry, 297.