STATUS REPORT: TIME AND FREQUENCY ACTIVITIES AT THE NATIONAL MEASUREMENT INSTITUTE, AUSTRALIA

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Abstract

The National Measurement Institute (NMIA) maintains Australia's standards of physical, chemical and biological measurement. The Time and Frequency group within the Physical Metrology Branch is responsible for developing, maintaining and disseminating Australian national standards for time of day, time interval and frequency. The group operates a calibration service supporting Australian industry, and continues to develop new test methods for instruments as required.

NMIA also has a long-running program to develop metrological systems which support a wide variety of dissemination applications. These include 'speaking clock' systems which make national standards widely available, GPS time-transfer systems for remote calibration of secondary standards, and NTP server systems providing accurate and traceable time for business applications such as timestamping. All of these systems are in use across Australia, and a number at many other APMP member institutes.

Active research areas include trapped ion microwave frequency standards, time and frequency transfer including GPS and TWSTFT techniques, and metrological applications of a recently commissioned optical frequency comb. The comb applications are being developed together with the Length group of NMIA as one of several joint projects involving common infrastructure and techniques.