

OPTIME – time and frequency dissemination system based on fiber optical network – local repository project

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The document describes a current stage of creating a high precision dissemination system for time and frequency reference signals - OPTIME. The OPTIME system is based on fiber optical network in Poland. The first part of document focuses on an operational 420-km long link between time/frequency laboratories: GUM in Warsaw and AOS in Borowiec. The comparison of UTC(PL) and UTC(AOS) which are provided by laboratories will be referred (Fig 1.)

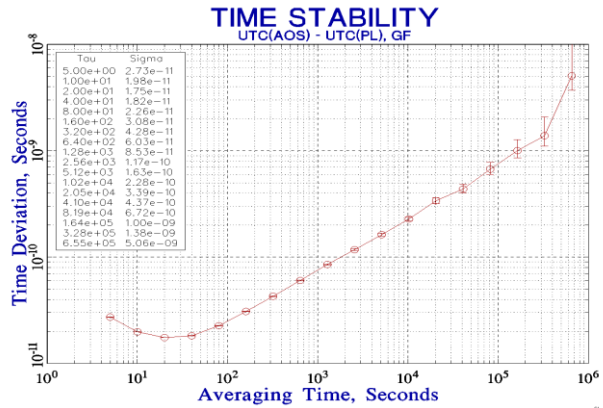


Fig. 1: Time variance - short term stability of the comparisons UTC(AOS) - UTC(PL) is very high, for averaging times of 10-20 s it is limited by the precession of the used counter (Stanford SR-620)

The second part of document presents all parts of OPTIME system. In particular a local time /frequency repository (Fig 2.) will be shown. This repository is a one of the key elements of the OPTIME system. It acts as a proxy system between reference laboratories and end users. Moreover it also provides a backup signals at the time of connection failure between repository and reference laboratories. The monitoring and control system will be also described with a hardware and software components. The last part shows a current status of building a local repository in PSNC - Poznan. Acknowledgement: Project OPTIME (no. PBS1/A3/13/2012) is co-funded by The National Centre for Research and Development – Poland.

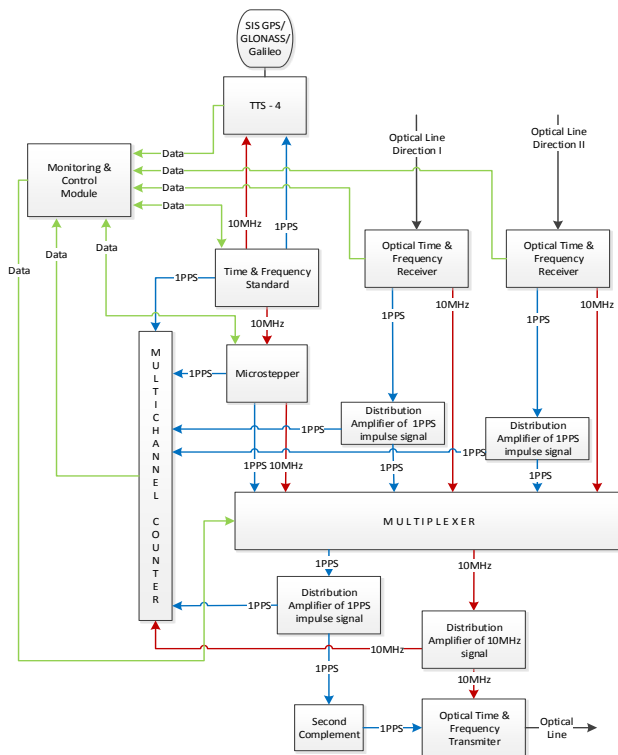


Fig. 2: Local time & frequency repository