

Central Office of Measures

<https://www.gum.gov.pl/en/projects/national/272,e-CzasPL-e-time-project.html>
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e-CzasPL (e-time) project

Author: tłumaczenie dr M.Mikiel
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The main objective of the project is to provide a service of credible and reliable distribution of official time signals, valid in the territory of the Republic of Poland and signals of Polish implementation of international universal coordinated time UTC(PL), generated on the basis of the state standard of units of time and frequency measures, having the status (guarantee) of official time and synchronization monitoring service, in response to the needs of different branches of the economy, public administration of different levels and the needs manifested in different areas of social life.



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e-public service, being product made as a result of e-CzasPL will consist of following parts:

user time authentication system - service of monitoring by NTP of UTC(PL) time synchronization with or without authentication;

UTC(PL) distribution system via dedicated fiber optic links or Ethernet using PTP protocol;

multi-platform application, allowing synchronization of the system time of an electronic device with the official time in the territory of the Republic of Poland, or allowing to determine and report the differences between the system time and official time

system of distribution of encrypted official time signals on the territory of the Republic of Poland by means of long radio waves with nationwide coverage.

Effects of the project

Increased availability of reliable, reliable, high quality official time linked to the UTC time

scale, which will further improve the reliability of user synchronization systems and indirectly translate into higher quality of services dependent on reliable time sources.

The process of obtaining information about official time and synchronization until that time for citizens and entrepreneurs on individual devices and in specialized IT systems, such as those used in: banking and finance, energy, or telecommunications, will be facilitated.

Possibility of obtaining information about the current status or getting acquainted with aggregate statistics from any reporting period with qualitative characteristics of synchronization to official time (monitoring system - time authentication).

The target recipients of the service will be public and private entities for whom reliable and accurate time synchronization is important:

Banks and Financial Institutions, Stock Exchange (Financial Markets). Complex ICT systems, working in a distributed architecture, often require synchronization to common time of even many thousands of machines (virtual machines), scattered in different geographical or logical locations. Noticing the problem of using time sources with insufficient quality parameters, bearing in mind the welfare of end users and the transparency of the financial market, the European Commission introduced additional regulations (MIFID II Directive, MIFIR, Delegated Regulation 2017/574, and accompanying regulations), imposing, among other things, the obligation to use UTC time and meet strict technical requirements for information systems. Today, banks and financial institutions around the world pay particular attention to finding sources of time that meet their needs.

Telecommunications companies and institutions. The technological development of this branch of the economy poses new challenges for telecommunication operators. 4G LTE, or its newer version 5G, requires the work of transmitting and receiving systems, as well as systems processing much larger volumes of information with much higher frequencies, which in turn leads to the demand for time synchronization services of high precision and stability.

The energy industry. The need for precise synchronisation in the power industry forms critical parameters for energy transmission, i.e. the phase and frequency of the generated voltage. Synchronous measurements, using PMU type devices, provide additional, precise information that can be used to continuously optimise the safety margin of the system. SCADA systems monitoring energy distribution parameters require the collection and transmission of data on changes in phase angles of the transmitted current (at each node of the transmission network at the same time), so that it is possible to react without the risk of causing a failure (incorrect reaction or correct, but with an inadequate delay) that could cause a domino effect and, consequently, the failure of a major part of the network (blackout).

SCADA systems and PMU devices require a time synchronization service for each node point, and time should be synchronized with UTC time with the development of national power grids (currently there are cross-border power grids).

Other areas

Moreover, the use of reliable sources of time and frequency is crucial in other sectors of the economy and areas of economic and social life:

operators and users of IT systems in transport,

operators and providers of television programmes and services (including cable and digital television),

air and rail traffic control,

providers of qualified electronic signature and time stamp services,

data processing centres,

companies using industrial automation,

hospitals and telemedical centres,

entities using electronic public procurement platforms, as well as tools for conducting grant competitions and recruitment,

entities providing IT solutions and enterprises and entities using electronic work time record systems,

suppliers and operators of sectional speed measurement systems,

and in general, a constantly growing industry focusing on the development of IoT-based technologies, e.g.: management of intelligent cities (e.g. automatic ticketing and validation, control of traffic light), intelligent agriculture, intelligent energy systems, autonomous vehicles.

sources of funding:

Priority Axis II of the Digital Poland 2014-2020 Operational Programme, Measure 2.1 "High accessibility and quality of public e-services".

The total cost of the project: PLN 11,898,429.00 of which 15.37% (PLN 1,828,788.54) comes from

the state budget and 84.63% (PLN 10,069,640.46) from European Union (EU) funds.

