FB\_TimeStamp description



Customer: Vistaprint

Foreword: Description oft he implemented time stamp FB

Project:

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Filing:

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# Basics

## Introduction

This document describes the concept and the behaviour of the Vistaprint time stamp FB and is intended for all of the involved software-programmer in the Vistaprint PLC software developing.

## Reference documentation

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| Document | Version | Date |
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## Version

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| Description | Author | Status | Version | Date |
| basic version | kvo | d | 0.1 | 13.10.2014 |
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Status: **d** = draft, **r** = released

## Abbreviations, definitions, glossary

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| Abbreviation | Designation |
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# Starting position

The idea is to implement a basic FUB for time stamp in different formats and with one call available. So every use of time stamps can be standardized and if needed the using of system functionalities can be optimized by one developer at one point.

## General FUB description

The FUB must be cyclic called for the synchronisation of the RTC time to the windows time and refreshing the time zone information. There are two basically different usage cases: one is the exact time stamp getting in UTC or calculated from the UTC, the other one directly uses the windows time.

Concerning the usage of the windows time Beckhoff writes: *The local Windows system time is read with the aid of acyclic services (ADS function blocks). Due to the system characteristics the runtime of the ADS commands cannot be specified/estimated. Differences in command runtimes may lead to time jitter at the systemTime output, depending on the operating system, the synchronisation interval and the PLC cycle time. For this reason the time supplied by the block is only suitable to a limited extent for measuring tasks requiring higher precision, although it tends to be adequate for building automation applications, for example.*

If there is no exact measurement need using the basic windows time as base is the easiest and most clear way for the end user. If he changes the windows time or time zone the time stamp will immediately change. The UTC time from the PLC (RTC) is only synchronised at start-up of the PLC and the time zone refresh time is configurable.

### Cyclic call

In\_t\_CycleTimeRefreshTimeZone : TIME; // refresh cycle time to read out time zone information from windows

In\_strNetId : T\_AmsNetID; // “”= local, net id from the used windows system

Out\_bolInitOk : BOOL; // init ok (i.e. it was synchronised with the local Windows time at least once).

* automatic asynchron windows time synchronisation for LocalTime\_FileTime\_BaseWin/ LocalTime\_TimeStruct\_BaseWin needed
* automatic cyclic TimeZone\_Refresh based on In\_t\_CycleTimeRefreshTimeZone parameter (=0 -> disabled)

### Properties (only read)

Cyclic FB call is needed for automatic time zone synchronisation, local time calculated, changes and adjustments on windows time not detected!

* **LocalTime\_FileTime\_BaseUTC**: automatic refresh on get, typ FileTime in local time calculated based on time zone and on UTC FileTime
* **LocalTime\_TimeStruct\_BaseUTC:**  automatic refresh on get, data typ TimeStruct in local time calculated based on time zone and on UTC FileTime

Do not use for exact measurements because of automatic asynchrony windows synchronisation

Cyclic FB call is needed for automatic windows synchronisation of win time! (the local Windows system time is displayed in the task bar)

* **LocalTime\_FileTime\_BaseWin**: automatic refresh on get, data typ FileTime in windows time shown in taskbar.
* **LocalTime\_TimeStruct\_BaseWin**: automatic refresh on get, data typ TimeStruct in windows time shown in taskbar
* **UTC\_FileTime**: Before get call UTC\_Refresh! data typ FileTime in UTC
* **UTC\_TimeStruct:** Before get call UTC\_Refresh! data typ TimeStruct in UTC

### Methods

* **TimeZone\_Refresh**: Refresh time zone information -> for explicit time calculation UTC<->Win